## Track and

# Structures

Volume 72

#### General Article Index

Illustrated articles What's the answer?

Editorial For your information Letter to the editor

AMAX, Inc.:
Use of paving train for placing concrete slab, \*Aug.
18
Alaska Railroad:

Report on concrete-tie test section, \*Aug. 32 American Hoist & Derrick: Previews new 840 series diesel-hydraulic crane, \*July 18

"July 18
American Railway Bridge and Building Assn.:
Program for Sept. meeting, Aug. 17
Program for Sept. meeting, Sept. 38
Convention report, "Oct. 24
American Railway Engineering Association:
Program for March meeting, Feb. 13, Mar. 27
Report of 1976 technical conference, "Apr. 30
Auron Steel." Armeo Steel:

Ballast:
Speno ballast cleaner, "Mar. 38
Size to be used on ladder tracks, (A) Mar. 93
What circumstances dictate which part of ballast section to clean?, (A) July 72
How is fouled ballast in tunnels cleaned?, (A) Oct. 41
Bessemer & Lake Erie:
Embarks on 5-year undercutting program, "July 13
Black Mesa and Lake Powell:
Report of inspection to check rumors of failure of concrete ties, "Jan 28
Branch lines:

nch lines:
Advantages of having rail laid with square and
staggered joints, (A) Nov. 56
Smallest tie plate that can be used and still be more
effective than no plate at all, (A) Dec. 34
Vegetation control on, \*Feb. 14

Vegetation consists.

Fridges:
Memoving drift from (A) Apr. 54
Methods for fire proofing, (A) Aug. 40
Use of Turzillo "Flex Form" to correct scour, "Sept. Canadian National treats with NON-FLAM, \*Sept. 35

393 Frocedures to follow when raising steel span four to five inches, (A) Sept. 86 How is rail expansion on timber approaches to a steel span controlled?, (A) Oct. 53 Practicability of thermite welding CWR on, (A) Jan.

49 Using helicopters for repairs, "Feb. 23 What factors determine whether to use a permanent structure or temporary bridge when destroyed, (A) Nov. 50

Treats bridges with NON-FLAM to prevent fire,
\*Sept. 35
Awards contract for 1.5 Million concrete ties to Con-

"Sept. 35 Awards contract for 1.5 Million concrete ties to Con-force Costain, "Nov. 42 Starts program to install concrete ties on sharper curves, "Dec. 14

curves, \*1 Canadian Pacific: Search for cause and cure of rail corrugations, \*Feb.

Search for cause and cure of rail corrugations, "ren. 24
Research into frog and switch design produces innovations, "June 26
Replaces washed-out bridge and reopens New Brunswick line, (F) Nov. 71

Celenese:
"Mirifi 140" roadbed stabilization fabric, \*Sept. 32

metron:
Awarded first operational contract from Conrail to
weld rail, (F) \*Sept. 97

Chessie System:
Starts line change to serve John's Creek coal area, (F)
Aug. 44
Report on concrete-tie test section, "Aug. 32
Chicago & North Western:
Return of the track-walker as a means of increasing
safety, "June 19
Uses V. N. DeFrizio Const. Co. to build long threetrack shoo-fly track, "Aug. 28
Uses Lee Tuzrillo Contracting Co. to correct scour
under bridge piers, "Sept. 25
Concrete:

Concrete:
Repairing deteriorated, (A) Feb. 50
Using vibrator to consolidate newly poured, (A) May
Use of paving train to pour tunnel floor, \*Aug. 18
Colorado Fuel & Iron:

Starts construction of rail mill expansion, (F) Aug. 44 acrete Ties:

icrete Ties:
Report on use and inspection trip of Black Mesa and
Lake Powell, \*Jan. 28
Performance of newest test sections, \*Aug. 32
Conforce Costain opens plant to mass produce, \*Nov.

42
Canadian National starts program to install concrete
ties on sharper curves, \*Dec. 14
Conforce Costain Concrete Tie Co.:
Opens plant to produce prestressed
concrete ties on
Canadian assis-production basis, \*Nov. 42

Conrail: nrail:

Maintenance of way outlook, (F) Jan. 6

Outline of track upgrading program, \*Jan. 18

Pushes 10-year track upgrading program, June 54

Gives 1,800 m/w employees to Amtrak, (F) July 80

M/W progress report, (F) Aug.

Awards contract for rail-welding to Chemetron, \*(F)

Sept. 97

A long road back for its track condition, (E) Nov. 6

Policies and practices, \*November 17

Origin, ownership, funding and rehabilitation program, \*Nov. 18

Progress and problems as seen by management.

Origin, ownership, funding and rehabilitation program, "Nov. 18
Progress and problems as seen by management,
"Nov. 23
Ten year rehabilitation program, "Nov. 25
Cost/benefit analysis establishes project priority,
"Nov. 36
Ungrading effort includes bridges, tunnels and other
structures, "Nov. 38
Continuous welded rail:
Should thermite welding be used when welding on
an open-deck bridge, (A) Jan. 49
Laying before or after retieing and surfacing, (A)
March 78
Handling at derailments, (A) March 95
Cutting out defective portion for replacement, (A)
Apr. 52
Methods for laying rails in long double-track mining
tunnel, "Aug. 18
Practicability of thermite welding on an open-deck
steel structure, (A) 49
Contractors:

Contractors:
Directory, \*July 31
Fast work in building long shoo-fly track, \*Aug. 28
Colorado & Southern:
Uses Cat 980B to lay rail, \*Jan. 23
Concrete Co.:

Costain Concrete Co.:
Signs agreement with Precon S.A. for expertise in the manufacture of concrete ties, (F) Oct. 58

Culverts:
Best method to use when replacing large diameter pipes in high fills, (A) Oct. 41

Department of Transportation:

IFAST facility, \*Apr. 22

Awards rail research contract to ENSCO, (F) Aug. 48

Issues preliminary report of classification of lines,
Sept. 31

DePrizio, V. N. Construction Co.:
Fast work in building shoo-fly track, \*Aug. 28

Department of the contract of

inage: Has the matter of drainage been neglected?, (A) June 40 Necessity of making surveys to correct, (A) July 64 Measures to improve at station platforms, (A) Nov. 3

Education:
Princeton University offers one-week course for track
engineers, (F) Jan. 56
University of Wisconsin offers two-day institute on
m'w (F) Jan. 60

January-December 1976

Facility for Accelerated Service Testing:
Proposed loop track at Pueblo, Colo. test center,
"Jan. 24
Dedication ceremony opens test track at Pueblo,
Colo. test center, "Oct. 36
Openation inaugurated, "Dec. 31
Federal Railroad Administration:
Proposed loop track at Pueblo, Colo test center, "Jan.
Dedication ceremony opens FAST track at Pueblo,
Colo. "Qct. 38.

24
Dedication ceremony opens FAST track at Pueblo, Colo., \*Oct. 38
Operation of FAST track inaugurated, \*Dec. 31
Fireguards:
Advisability of plowing along right-of-way, (A) Feb.

Fire-proofing:
What measures are taken to protect new bridge decks from fire, (A) Aug. 40

Floods: Wreck Union Pacific lines in Idaho, \*Aug. 22 Fort Knox and Denver Mint: Overcomes recession problems, \*Mar. 18 Fox, LeRoy F.: Interview with, \*Sept. 42

Grade crossings:
Availability of funds to improve, (E) May 6
Recognition of need to improve, "May 14
Guide to modern surfaces, "May 18
Costs of various types, "May 20

Costs of various types, they can be seen as the condition of the condition

Helicopters Aids in bridge repairs, \*Feb. 23

Idaho:
Flood waters from failed dam wreck Union Pacific lines, "Ang. 22
Illinois Central Gulf:
Lee Fox talks about new directions in m/w policy, "Sept. 42
Replaces truss bridge deck with fire retardant treatment (Koppers' NCX), "Dec. 17
Insulated joints:

measures used when tamping, (A) Jan. 49
Economics of glued-in-the-field vs glue fabricated in
the shop, (A) March 91

Kansas Test Track:
Post-mortem for, \*Apr. 16
Lessons learned from, (E) May 6
Fost-mortem, \*May 32
Fopers' Chemical:
NCX fire retardant used on Illinois Central Gulf truss
bridge deck, \*Dec. 17

Labor:

What can a railroad do to prevent an employee from
developing undesirable characteristics?, June 44
Lee Turzillo Contracting Co:
Uses "Flex Form" to correct scour beneath bridge
piers on C&NW, "Sept. 25
Long Island Railroad:
Uses Lock Spikes and Pandrol fastenings to reduce
tie plate movement, "Jan. 26
Loram Maintenance of Way Division:
Undercuts B&LE in a 5-year program, "July 14
Introduces new out-of-face rail grinder, "Sept. 16

Maintenance of Way:
Review of 1975 and forecast for 1976, \*Jan. 16
Don't abandon those training programs, (E) Feb. 8
Three most pressing problems, (A) March 97

Maintenance of Way:

Long and short term supply situation, (E) Apr. 6
Chief engineers tell how they would spend 4-R
money, "June 16
Return of trackwalker to C&NW, "June 19
B&LE embarks on 5-year program to undercut the
entire railroad, "June 13
Lee Fox talks about new directions in policy on the
ICG, "Sept. 42
Soft roadbeds: Opportunity for big savings, (E) Oct. 6
In what order should track bolts, be tightened?, (A)
Oct. 40
Light at the end of the tunnel, (E) Jan. 6
Special problems encountered in tamping insulated
joints, (A) Jan. 49
Paperwork overload problem and the maintenance of
way supervisor, (E) Feb. 8

Maintenance of way machines:
Loading for movement by movement, (A) May 48
Second generation the injector by Kershaw, "June 32
How automated track-lining and raising systems
work—Jackson system, "Supt. 28
How automated track-lining and raising systems
work—Plasser system, "Sept. 28
How automated track-lining and raising systems
work—Fairmont system, "Oct. 28
How automated track-lining and raising systems
work—Fairmont system, "Oct. 28
How automated track-lining and raising systems
work—Fairmont system, "Oct. 28
How automated track-lining and raising systems
work—Fairmont system," Dec. 28
Matia:
Introduces P-811 track renewal train, "Sept. 40

Introduces P-811 track renewal train, \*Sept. 40

Missouri Pacific Railroad:
Weed and brush control practices on branch lines,
\*Feb. 16 Organization of high production tie gang, \*Mar. 28

Monsanto: "Glera" Bidim" stabilization fabric, \*July 20 Morrison-Knudsen Co.: Expands railroad engineering service, (F) Sept. 96

National Railroad Passenger Corp.:
Receives 1,800 Conrail ra/w employees for use in the Northeast Corridor, (F) July 80
Norfolk and Western:
Purchases 120-mile Conrail branch in effort to improve service, (F) Oct. 58
Report on concrete-tie test section, \*Aug. 35
Northeast Corridor:

theast Corridor:
FRA and FHWA outline proposed improvements, (F)
Aug. 48
Money starts flowing, (F) Nov. 71

People: The quality most needed by chief engineers, (E) Au-The quality most needed by cniet engineers, (E) August 6
Motivation key to good management, \*Aug. 26
Is the crises in the shortage of qualified supervisors going to get worse, (E) Sept. 6
M/W people can help bottom-ranked railroads, (E) Dec. 6
Don't abandon those training programs, (E) Feb. 8
Piles and pile driving:
Determining bearing capacities, (A) Feb. 41
Rate of growth of decay in, \*Apr. 26
Are longer piles needed, (A) May 58
Are longer piles needed, (A) May 58
Plasser-American Corp.:

Now.—the Plasser system, \*Sept. 28
Pollution control:
Plasser-American Corp.:
Plasser-

work—the Plasser system, "sept. so"
Pollution control:
Problems associated with operation, "May 39
Portland Cement Association:
Report on latest concrete-tie test sections, "Aug. 32
Princeton University:
Offers one-week course for trackmen, (F) Sept. 99

Programming:
Use in planning work of track-maintenance forces in terminals, (A) Apr. 41

What factors contribute to the failure of stock rails,

(A) Sept. 78

Advantages and disadvantages of having rail laid with square or staggered joints, (A) Nov. 38 Precautions to be taken after being run on by a bro-ken wheel, (A) Aug. 38

Rail corrugations: Search for cause and cure on CP Rail, \*Feb. 24 Rail metallurgy practices:
U.S. Tour group observes in Soviet Union, \*Sept. 20

U.S. Tour group observes in ourself and a surface of the surface o

Roadbed stabilization: Should borings be taken, (A) Aug. 43

Should borings be taken, (A) Aug. 43
Roadmasters' Asan.:
Program for Sept. meeting, \*Aug. 17
Final program for Sept. meeting, \*Sept. 38
Convention report, \*Oct. 24
Roadway stabilization fabrics:
"Bidim" offered by Monsanto, \*July 12
"Mirifi 140" offered by Celanese, \*Sept. 32
"Typar" offered by DuPont, \*Oct. 22
"Polyfelt TS 300" offered by Advance Construction
Specialities, \*Dec. 18

St. Johnsbury & Lamoille County Railroad:
Site of unusual grade separation using Armco
Super-Span, \*Nov. 55

Safety:
Do run-through type switches encourage train crews to run-through conventional switches?, (A) Nov.

Should a division engineer issue monthly safety message?, (A) June 35 messager, (A) June 35
Santa Fe:
Uses Cedrite recycled ties near Streator, Ill., \*June

22
Report on concrete-tie test section, \*Aug. 34
Seaboard Coast Line:
Use of Rennord/Nordberg Rail Gang Spiker to control
wide gauge, \*Apr. 19
Skeletonizing:
Loram crib skeletonizer, \*Mar. 40
Scaling:

Scaling: Of rock cuts, (A) Apr. 46

on rock cuts, (A) Apr. 46 them Pacific: Claims record in renewing bridge bridge deck \*July 16

Switches:
Factors that determine the use of run-through type switch stands, (A) Nov. 60

Factors that determine the use of run-through type, (A) Nov. 60

pers: Jackson 900 multiple tamper, \*Mar. 36 Plasser universal yardmaster, \*Mar. 46 Plasser roadmaster special, \*Mar. 56

s: Research and tests on the use of recycled and dowel-laminated, "June 22 What determines when renewals should be carried out by a gang or a T&S gang, (A) July 62 What is the optimum number that should be re-newed per mile to maintain class 4 track?, (A) July 72

Performance of newest concrete-tie test sections, \*Aug. 32

What is the most economical method of replacing in yard tracks?, (A) Oct. 54

Conforce Costain opens plant to mass produce con-crete, \*Nov. 102

Canadian National starts program to install concrete ties on sharper curves, \*Dec. 14

Turmoil in crosstie practice in Canada, \*Dec. 20

Should each roadway supervisor have an emergency supply, (A) Dec. 39

Tie plates: Use of Koppers Poly-plate, \*Feb. 28 Union Pacific uses 16 in. plate to control wide gauge, Omon Pacific uses 10 in. plate to control wice gauge, "Mar. 14 Should hole be cut in tie plate to accommodate upset metal of a welded joint, (A) Jan. 46 Long Island uses Lock Spikes and Pandrol fastenings in effort to reduce movement and wear, "Jan. 26

Timber trestles: Rate of decay growth in, \*Apr. 26

Rate of decay growth in, "Apr. 26
Track:
Wide gauge correction on SCL using Rexnord/Nordberg Rail Gang Spiker, "Apr. 19
Correcting priority defects after they are found by
detector and track geometry cars, (A) July 64
What precautions are taken after a broken-wheel has
been operated over?, (A) Aug. 38
In what order should track bolts be tightened?, (A) Oct. 40

Oct. 40
Track-train dynamics:
Research leads to use of 16 in. tie plate to control wide gauge, \*Mar. 14
Track-renewal brains:
Matisa P-811 system, \*Sept. 40

Track patrol: Use of helicopter in Australia, \*July 84

Tunnels:

Methods for laying rails in long double-track mining tunnel, "Aug. 18

Turnouts and switches:
Research on CP produces innovations in design,

\*June 26 Should work be done ahead of or behind out-of-face work, (A) July 68

Undercutting: dercutter cleaner, \*Mar. 39

Kershaw undercutter cleaner, \*Mar. 39 Union Pacific Railroad: Weed and brush control practices on branch lines, \*Feb. 16 \*Feb. 10
Uses 16 in. tie plate to control wide gauge, \*Mar. 14
Floods wreck lines in Idaho, \*Aug. 22
Union of Soviet Socialist Republics:
New look at track practices in, \*Oct. 16

Vacor Construction Co.: Uses helicopter to speed bridge repair, \*Feb. 23

Waterproofing: equirements of overhead highway bridges, (A) Feb.

Use on new concrete structures, (A) Apr. 44
Weed and brush control:
Control and special problems on branch lines, \*Feb.

Union Pacific practices, \*Feb. 16
Missourt Pacific practices, \*Feb. 16
Practices on Reading, \*Feb. 15
Practices on Reading, \*Feb. 15
Welding:
Size of engine burns, (A) Sept. 78
Precautions to be taken when welding second-hand rail, \*Dec. 32
Should CWR be thermite welded on an open-deck steel structure, (A) Jan. 49
Wisconsin, University of
Offers two-day institute on m/w, (F) Jan. 60

Yard cleaning: Marmon yard patrol, \*Mar. 40

### **New Products**

#### (\*) Illustrated item

Aeroquip Corp.:
Hydraulic hose, "Mar. 75
American Hoist and Derrick:
Diesel-hydraulic locomotive crane, "Mar. 56
Impact wrench, "Aug. 49
Automatic Equipment Division:
Electro-magnet, "Nov. 61

Caterpillar Tractor Co.:
Fixed pivot backhoe, "Mar. 66
245 Hydraulic excavator, "Mar. 75
Low Ground Pressure shoes, "Mar. 76
Sealed and lubricated track for older model Cat tractors, Aug. 52
D7G low-ground-pressure tractor, "Sept. 108

Devcon Corp.: Devoon Corp.:
Dispenser-mixer for epoxy, \*Apr. 40
Diamond Saw Works:
Sabre saw blades, \*Dec. 43
DuPont Co.:
Velpar herbicide, \*Mar. 76

Fel-Pro, Inc.: Cast-in-place crossing system, \*May 38 Fairmont Railway Motors: W115 Series B tie remover, \*Mar. 50 Foster, L. B. Co.: Industrial keg carrier, \*Aug. 51

General Tire and Rubber Co.: Gen-Trac railroad crossing system, \*Mar. 58

HIAB-FOCO: Remote control unit for cranes, Aug. 50 High-Lite Corp.: Mobile light tower, \*Aug. 49

Indicating Caliper Co.; Dual indicating caliper, \*Oct. 39 ISCO Manufacturing Co.; Industrial snow plow, \*Mar. 56 Inspection van, \*Mar. 70 85-ton mobile crane, \*Apr. 39

Jackson Corp.: 900 multiple tamper, \*Mar. 36

Kershaw Manufacturing Co.: Introduces second generation tie injector, \*June 32 Model 32-5 brush cutter, \*March 37 Model 72 undercutter-cleaner, \*Mar. 39 Koehler Manufacturing Co.: Portable handlight, Nov. 45

Lake Geneva A & C Corp.:

Waterless toilet, "Oct. 28

Little Giant Crane and Shovel:

RIP track crane, "Aug. 51

Loram Maintenance of Way Division:

Introduces 24-stone rail grinder, "Sept. 16

Crib skeletonizer, "Mar. 40

MAPP Products:
Portable cutter and welder, May 38
Mississippi Valley Equipment Co.:
Sheet pile planning kit, \*Nov. 45
Modern Track Machinery:
Tie changer, \*June 34
Hydraulic rail threader, \*Mar. 37
Margor, Tier statifum

Marmon Transmotive: Yard patrol, \*Mar. 41 Pandrol Ltd.:
Pandrol applicator, \*Mar. 75
Pettibone Corps:
Master 8 Brushcutter, \*Mar. 58
Plant City Steel Co.:
Concrete the fastener, \*Mar. 66
FAB-RA-CAST precast concrete crossing, \*Sept. 10
Plasser American Corps:
Improvements in roadmaster special, \*Mar. 56
General roadmaster tamper-liner, \*Nov. 45
Universal yardmaster, \*Mar. 46
Portec, Inc.:

Universal yatunans.,
Portec, Inc.,
Curv-Bloc, \*Sept. 60
Portec' Kango Type 900 ballast tamper, \*Sept. 108
Potter Industries:
Air line check valve, Nov. 45
PROTO Tools:
34-inch drive torque wrench, \*Oct. 39

Quaker City Transportation Sales Corp.: Q.C. Combo gauge and level, \*Mar. 76

Racine Railroad Products, Inc.:
Dual applicator to install Pandrol anchors, \*Jan. 62
Railroad Friction Products Corps.:
Cobra grade crossing surface, \*May 38
Railroad Maintenance Corp. Div. of Portec:
Three-point line measuring device, Oct. 38
Railway Track Work Inc.:
Profile grinder, \*Nov. 45
Ranging, Inc.:
Rangematic 400 sighting instrument, \*Apr. 41
Reach-All Manufacturing & Engineering Co.:
Aerial baskets, \*Apr. 29
Aerial baskets, \*Apr. 29
Research Products/Blankenship Co.:
Electric incinerating toilet, Aug. 50
Rhino Tool Co.:
Air operated post drivers, \*Aug. 50
Schwarm, Inc. 4

Schramm, Inc.:
Model \$250 Pneumatractor, \*Mar. 70
Seaman Nuclear Corp.:
Density/moisture meter, \*Dec. 43
Speno Rail Services Inc.:
Double capacity ballast cleaner, \*June 34
Shoulder ballast cleaner, \*Mar. 38
Szarka Enterprises, Inc.:
Reactive spring washer, Mar. 50

Tasa Corp.: Allegheny Epoxy Pack, \*Mar. 50 

Velsicol Chemical: "Ravage" herbicide, Aug. 48 Warmer Shell-ter, Ltd.:
Portable tent, Jan. 62
Warmer & Swasey:
C-440 Cradall, "June 34
C-660 Cradall, "Dec. 42
Improved Gradall bucket, "Dec. 42
Western-Cullen Div.:
Reflectorized switch target, "Sept. 60
Electric switch lamp, "Sept. 60
Woodbine Corp.:
Truck-mounted drill, "Mar. 50

### (\*) Illustrated article

Adams, J. I., Mar. 97 Ahlbeck, D. R., (E) June 56 Andrews, D. J., Apr. 54 Atkinson, G. S. Jr., May 42

Bailey, Richard W., \*June 19
Bailey, Richard W., \*June 19
Barnum, C. W., Sept. 90
Bartley, C. W., May 44
Beck, R. F., Oct. 16
Bell, R. A., July 72
Bertel, D. J., (A) Mar. 91
Beyerl, James E., Apr. 42
Bowman, J. R., Apr. 41
Bradshaw, Bruce W., July 25
Brown, G. D., Apr. 46
Brueske, R. J., June 37
Burdell, C. A., June 22

Carlson, A. W., (A) Mar. 91
Calloway, L. J., May 48
Chandler, J. E., Sept. 65, Sept. 88
Christensen, M. C., May 59
Cobb, W. E., May 52
Collins, Carol G., Oct. 28
Cors, B. E., May 21
Cosgrove, P.A., June 44
Cossel, J. D., (A) Mar. 97
Crawford, D. E., May 52

De Berg, D. G., July 69 Dick, Merwin, \*Jan. 28 Dolan, P. J., Sept. 82 Donica, J. W., July 76 Diersen, L. M., May 41 Drew, F. P., Apr. 44 Drew, R. P., May 52

Ekrem, N. E., Nov. 50 Ellis, J. S., Dec. 36 Eskengren, E., Mar. 80, Dec. 32

Forcier, B. R., Aug. 43 Ford, L. G., July 64 Fox, L. F., (A) Mar. 99 Frederick, E. R., Sept. 86 Freeman, L. D., July 72

Gagne, J. A., July 69 Garland, R. G., June 40 Gatch, J. N., Aug. 38 German, J. G., Nov. 50, (L) Dec. 45 Gould, D. C., May 44 Graham, S. W., Oct. 40

Granam, S. W., Oct. 40
Hague, C. H., (A) Feb. 50
Hanges, J. P., (A) Jan. 46
Hanges, Sam, Nov. 56
Hartly, J. L., Feb. 52
Henderson, K. E., July 70
Hetrick, W. C., Sept. 78
Hoadley, D. E., Mar. 95
Hoffman, Gary, June 44
Hollimon, James A., Oct. 40
Hudson, B. C., Mar. 78
Hunter, J. T., Mar. 95

Intlekofer, C. F., Apr. 50 Izzo, S., Mar. 93

Jones, D. C., Jan. 46 Jones, W. J., July 73

Keeling, B. R., May 41 Krupa, G. E., May 58

Lamphier, G. K., Dec. 32 Larson, R. E., Oct. 41 Letro, J. M., June 37 Lloyd, J. H., Aug. 26 Ludwig, K. J., June 40

McBride, D. A., Aug. 43 McCue, Patrick J., May 14 McElroy, T. F., July 64 McGinley, M. E., May 48, June 35

Manganaro, Frank L., May 39 Mann, W. R., Feb. 48 Mansheim, R. C., Dec. 32 Mattle, T. J., July 68, Oct. 41 Mazzareila, M. M., Feb. 41 Meek, H. V., Jan. 56 Monaghan, A. E., June 37

Norton, Kenneth J., Apr. 26, Aug. 41

Opitz, W. A., Dec. 34

Palmer, J. W., May 58 Palmer, R. E., Apr. 41, Sept. 65 Papa, R. O., Nov. 60 Pauli, L. L., Dec. 40 Pearson, R. T., Nov. 60 Pember, R. W., July 62 Potter, R. H., Aug. 40

Richards, A. M., Apr. 54 Richards, F. Jr., Jan. 46 Rosenkranz, F. E., Sept. 65 Rudolph, E. C., Jan. 46 Rushmer, J. R., Dec. 28 Russell, R. B., Mar. 97

Saegesser, W. A., May 42 Schoultz, R. A., July 67 Schwing, V. M., Dec. 39 Seyrlehner, George, "Sept. 28 Shaw, J. W., Mar. 33 Smith, F. H., "Mar. 16 Smith, M. R., Sept. 86 Stone, D. H., Sept. 20

Umberger, H. J., Sept. 67

Wallace, R. P., June 38
Watts, J. H., July 64
Web-r, J. W., Aug. 32
Whitham, W. C., Nov. 56
Wilkinson, E. W., Jan. 49
Williams, J. R., Apr. 26
Wilson, M. E., July 72
Woolford, Frank, (L.) Feb. 54
Wright, P. W., Mar. 89

Young, W. B., Oct. 40 Zollman, John P., May 28

## Track and

# Structures

Volume 73

January-December 1977

#### **General Article Index**

- Illustrated articles
- What's the answer? Editorial
- For your information Letter to the editor

- Abex: Develops all-welded turnout, \*June 16
- Abandonments:
  What work must be done before actual removal,
- What work must be done before actual removal,
  "June 70
  American Hoist & Detrick:
  Provides locomotive crane used with leads as pile
  driver, "Oct. 30
  American Railway Bridge and Building Assn:
  Skeleton program for September convention, Aug. 14
  American Railway Engineering Association:
  Program for 76th annual technical conference, March
- Amsco:
  SA-T40 flux-cored wire used by Santa Fe for welding rail-ends, "July 22
  Anchors, rail:
  True Temper Corp., Railway Appliance Div. develops rail-anchor test machine, "July 30
  Armco Steel Corp. Metal Products Div.:
  Super-Span used to eliminate troublesome traffic tangle, "July 18
  Supplier of steel buildings to Louisville & Nashville snew Strawberry yard, "Dec. 28
  Atchison, Topeka & Santa Fe:
  Extends tie life with spike-hole compound, "March 48
  Turnout design practices "June 22

- 48
  Turnout design practices \*June 22
  Adopts flux-cored wire for rail-end build-up, \*July 22
  Automated track-lining and raising systems:
  Tamper system, \*Jan. 24
  Automotive rail guide wheels:
  Origins, progress and problems, \*June 28

- Ballast:
  What factors are considered when deciding whether to add stone or not?, "Oct. 48
  Ballast deck bridges:
  Corrective measures for pumping joints, (A) March 66

- Converting to from open-deck "April 24, (A) June 30 Banvel:

  Use on the Illinois Central Gulf, "Dec. 26
  R. H. Bogle Co.:

  Uses "Roundup" in contract spraying on Scaboard Coast Line, "June 33
  Bolt retightening:
  Ellminated by use of Loctite RailSafe, "Sept. 38
  Boston & Maine:
  Pursues aggressive program to get states to use Federal money for grade crossing improvements, "May 23
  Applies for \$25.867 million in preference share funding, (E) June 6
  Grade crossing renewal now a major operation; procedures and equipment, "Sept. 24
  Bridges:
- Bridges:

  Bridges:

  Is it practicable to turn stringers over to obtain additional service life? (A) Sept. 78

  Builington Northern moves fast to restore service when derailment knocks out TPG near La Grange, III. \*0ct. 99

  Is there economy in recovering old steel spans? (A) Oct. 38

  Under what conditions is it advisable to double-cap a timber bridge (A) Nov. 67

  Converting open-deck trestles to ballast-deck structures, \*April 24, (A) June 58

  Procedure to use when russing steel spans four or five inches, \*April 26

  Removing silt from under (A) April 38

  Use of helper stringers to strengthen chords of older timber trestles, (A) Aug. 44

1977 Index—Railway Track & Structures

- Special problems feature epoxy repairs on Soo Line
- bridge, "Sept. 51 Practices on Missouri Pacific, (A) Nov. 30 Practicability of straightening a tilted pier, (A) Dec.
- Bridges and buildings: Records necessary to maintain, (A) March 88
- Records necessary to manners,
  Buildings:
  Advantages of portable-type, (A) Aug. 60
  Burlington Northern:
  Use of switch tampers for turnout maintenance,
  "June 20
  Hard decisions and quick work when derailment
  knocks out three track TPG, "Oct. 19
- Camber on steel spans: Importance of loss of, (A) July 83 Canadian National:
- - audian National:
    Uses mileage counters on m/w machines to reduce
    costs, \*July 24
    Reasons for installing concrete ties in Mountain region, \*Aug. 24
    adian Pacific Railway:
    Research programs into turnout improvement, \*June
    is 18
- Chessie System:

- Chessie System:
  Turnout design practices, \*June 22
  Chicago & North Western:
  Applies for \$17.35 million in preference share funding, (E) June 6
  Uses new crane pile/lead combination on Iowa branch-line trestle, \*Oct. 30
  Chicago, Milwaukee, \$1. Paul & Pacific:
  Applies for 4-R money for upgrading line between Chicago and \$1. Paul, \*Jan. 20
  Applies for \$91.7 million in preference share funding and \$17.75 million in guaranteed loans, (E) June 6
- Chicago, Rock Island and Pacific:
  Applies for 4-R money for upgrading "Sunbelt" line,
  \*Jan. 20
- an. 20 es for \$72 million in preference share funding,
- (E) June 6
  Applies for \$88.2 million in guaranteed loans, (E) June 6
  Uses Geismar model MRT tie renewer, \*Dec. 35
- Uses Geismar model Mr1 be renewer, 2000 Mr. Chicago Transit Authority: Lets contract for grade crossing work to V. N. Deprizio Const. Co., "Dec. 20 Columbus & Greenville: Applies for \$3.5 million in preference share funding, (E) June 6

- (E) June 6
  (E) June 6
  (E) June 6
  (E) MARTA awards contract to joint venture, Jan. 62
  (E) Florida East Coast completes 13-year replacement program, "March 27
  (Status of the concrete tie: complicated, (E) Aug. 8
  (Factors that led to the decision to install concrete ties on the CN's Mountain Region, "Aug. 24
  (4-mile test section on CN, "Aug. 24
  (Use of on Metropolitan Atlanta Rapid Transit System, "Aug. 27
  (Use of with conventional rail anchors, "Aug. 29
  (Test criteria: loading, measurements, "Aug. 30
  (Test criteria: loading, "Aug. 30
  (Test cr
- Tall:
  Battles snow and blizzards, \*March 22
  To spend \$3.8 million on B&B equipment, (F) May
  68 In three-year program to mechanize basic forces,
  \*September 28
  Continuous welded rail:
- ntinuous welded rail:

  Objections to laying at night, (A) March 96
  How to avoid pull-aparts due to unequal bolt tension
  (A), Sept 102
  Placement of rail heater when laying, (A), Dec 51
  lverts:
  Repair of stone box (A), Feb. 50
  Best methods to use when placing in new or old fills,
  (A), March 74
  Using to correct poor drainage at station platforms.
- - Using to correct poor drainage at station platforms, \*April 20

- Department of Transportation (DOT): Rationale behind decision to use 400 miles of con-crete ties instead of wood ties, "Sept. 42 Deprizio, V. N. Construction Co.: Gets contract for work on Chicago Transit Authority grade crossings, "Dec. 20

- grade crossings, Section Platforms, \*April 20
  Improving when sit has collected under bridges, (A)
  April 38
  Duluth, Missabi & Iron Range:
  Six chemicals are replaced with two for weed killing;
  spot spraying used, \*Sept. 40
- Education: Vacuum in railroad engineering, (E) Dec. 8 Evans Prod. Co.: Auto rail vehicle \*June 28
- Facility For Accelerated Service Testing (FAST) Need for faster information from, (E) March 6 First progress report gives early returns, \*July 14 Fairmont Railway Motors: A-30 & A-32 Hy-Rail \*June 28 Field welding: Does order of welding affect results, (A) Sept. 88
- Fire equipment:
- Fire equipment:
  Frequency of testing, (A) Jan. 44
  Florida East Coast:
  Completes 13-yr. concrete-tie placement program,
  March 27
  March 27
- "March 27
  Close-up of m/w practices, "March 27
  Foster, L. B. Co.:
  Builds big inventories of track materials, "April 29
  Foundation Equipment Corp.:
  Semi-fixed pile leads furnished for use with locomotive crane on C&NW, "Oct. 30
  French National Railways:
  Use of 1/30 and 1/60 turnouts, "June 16
  Development of movable-point frog, "June 18
  Frogs:
- Development of the State of the State of Solid manganese, "June 16 Solid manganese used by Taiwan Railway Administration, "June 26
- - Geismar (Modern Track Machinery):
    Rock Island uses tie renewer at local level for spot renewals, \*Dec. 35
    General Accounting Office:
    Report to Congress on tie and rail availability in event of massive rehabilitation program, \*Feb. 24
  - Gage rods: Use of, (A) Jan. 38

  - Gage rods:
    Use of, (A) Jan. 38
    Grade crossings:
    Federal money available for improvement of, (E)
    May 6
    Status of Federal grade-crossing safety funds by
    States (Federal Highway System only), "May 17,
    Chart May 19
    What individual states are doing with their Federal
    funds, "May 20
    Aggressive program undertaken by Boston & Maine
    to get states to use Federal money allotted for,
    "May 23, "September 24
    Grade crossing renewal:
    Procedures and equipment used on B&M "Sept. 24
    Work methods used by V. N. Deprizio Construction
    Co. in renewing eight crossings on the Chicago
    Transit Authority, "Dec. 20
    Grade crossing safety:
    What individual states are doing with their Federal
    funds, "May 20
    Grade crossing surfaces." 96
- Grade crossing surfaces:
  Quick guide to, "May 26
  Grade crossing warning systems:
  Analysis finds technology at high level, May 28
  Offerings of the manufacturers, "May 29 Guard rails:
  What factors determine use of?, (A) Oct. 60
- Huck fasteners:

Illinois Central Gulf:
Gives second-generation treatment of pile trestles,
\*Jan. 28
Applies for \$164.75 million in preference share funding, (E) June 6
Taps potential of dual-operator switch tampers,
\*June 24, \*Sept 36
Tailors vegetation control to fit location and problem,
\*Dec. 26
Insulted Giotes:

Insulated joints:

How many ties are needed to support?, \*Oct. 44 Cures for sliding insulation in, (A) Oct. 52

Jackson Vibrators Inc.:

Machine built in collaboration with ICG seen working at Memphis, Tenn. \*Sept. 36

Koppers Company, Inc.: Supplies poly tie plates to White Pass & Yukon, \*Oct. 24

La Grange, Ill.:
Denailment on Burlington Northern causes bridges to fail, \*Oct. 19
Landslides:
Methods of controlling, (A) July 78
Louisville & Nashville:
Tarnout design practices, \*June 22
Uses Armoo steel buildings at New Strawberry yard, \*Dec. 28
Little Giant Crane & Shovel:
Completes building expansion, \*Jan. 62

Maintenance of Way:
Sharply higher work programs for year, \*Jan. 14
Practices on Florida East Coast, \*March 27
Do track-renewal trains have a place in American railroads, \*March 32
Is the 100-ton car the limit or will car weights keep going up?, \*March 50
The European equipment invasion: Where is it heading?, (E) April 6
Productivity: What is needed to get the most from track gangs?, \*April 17
Frequency of main-line switch inspection, (A) Aug. 41
Conrail in three-year program to mechanize basic

411
Conrail in three-year program to mechanize basic forces, \*Sept. 28
Will elevating rail small amount prevent car rock-offs, (A) Sept. 94
To what standard should passing tracks be maintained in CTC territory (A) Sept. 96
Lee of machines in terminal track maintenance, \*Oct. 39

32 Instantes in terminal tack maintenance, \*Oct. Policy on Missouri Pacific, Nov. 20, 22 Intenance of way machines:
How automated track-lining and raising systems work—RMC system, \*April 30
ICC puts dual-operator switch tamper through paces, Conrail in three-year program to mechanize basic forces, \*Sept. 28
What items are necessary for use on a short line railroad, (A) Sept. 70
At what depth should tamping tool feet be adjusted?, (A) Dec. 49
IRTA:

MARTA:

NTA:
Designs for elevated structures, °Feb. 17
Awards contract for concrete ties, Jan. 62
souri Pacific:
Turnout practice and design, °June 22
Use of Loctite Railsafe on crossings at Salem, Ill.

Use of Loctite Railsafe on crossings at Salem, Ill.

"Sept. 38

M/W probe 5, Nov. 19:

M/W policy—management viewpoint, Nov. 20

M/W policy—work methods, gang organization track
surfacing policies, "Nov. 22

Bunching work gangs, "Nov. 30

Bissouri-Kansas-Texas:
Applies for \$12 million in guaranteed loans, (E) June

Constructs multi-seated inspection car in 1917,

New Albany, Ind.:
Uses Armco Super-Span to untie traffic tangle at
tracks of Southern Railway, "July 18
Northeast Corridor Improvement Program:
Rationale behind using 400 miles of concrete ties

instead of wooden ties, \*Sept. 42 Northeast Corridor: Improvement summary, \*Jan. 16

Osmose Wood Preserving Co.: Gives second-generation in-place treatment to ICG pile trestles, \*Jan. 28

Patrolling track:
Factors determining necessity and frequency, (A)
Feb. 41

People:
What is needed to get the most from track gangs?,
\*April 17
Is the roadmaster getting a fair deal? (E) Oct. 8
Road for non-grads, rough but not hopeless, (E) Nov.

How to make it in M/W without a college degree, \*Nov. 32

\*Nov. 32
What measures can control track machinery vandalism?, (A) Nov. 46
Educational vacuum in railroad engineering, (E)
Dec. 8

Dec. 8 seer-American Corp.: Use of dual-operator switch tamper on Illinois Cen-tral Gulf, \*June 24

Pollution:

Pollution:
Removing oil from saturated ground, (A) Feb. 46
Product liability:
A railroad problem, too, (E) September 6
To hell on a handcar (the next professional malpractice crisis), \*Sept. 31

Rail:

Projected availability in event of massive rehabilitation program, "Feb. 24
When is it worn out?, (A) Feb. 34
Protecting new rail with slow order, (A) Feb. 48
How to center-mark, (A) March 82
Imports of new and the crisis in the steel industry, "Dec. 23
Railway Automotive Management Association: Works toward solving problems, "June 29
Rail guide wheels.
Early inspection tombitive, "June 28
Early inspection vehicles, "June 28
Early inspection vehicles, "June 28
Rail-end build up.
Santa Fe uses flux-cored wire, "July 22
Railroad automobile shops:
Is it economical for a railroad to own its own shop, (A) June 45
Railroad rossings:
Keeping tight with Huck fasteners, "Feb. 20
Railroad Revitalization and Regulatory Reform Act: Money available to states for light-density lines, "Jan. 19
Will there be enough money?, "Jan. 20
Slow disbursement of funds for improvements to be carried out during 1977 work season, (L) June 6
Money starts flowing for rehabilitation of light-density lines, "July 25
Railway Engineering-Maintenance Suppliers Association:
Complete guide to 1977 exhibit, Mar. 44

Railway Engineering-Maintenance Suppliers Assoction:
Complete guide to 1977 exhibit, Mar. 44
Railway Tie Association:
Report of 1977 convention, \*Dec. 30
Railway Track-Work:
Relocates entire manufacturing facilities, \*Aug. 15

Rebocates

Rip-rap:
Necessity for placing, (A) Dec. 42

Necessity for placing, (A) Dec. 42

Roadmasters and Maintenance of Way Assn:
Skeleton program for September convention, Aug. 14

Complete program for September convention, Sept. Convention report of 1977 meetings, \*Oct. 26

Safety:
Proper stance and position for tightening track bolts,
(A) Aug. 51

Scales: (A) Sept. 98

How tight should check rods on a weigh bridge be?, (A) Sept. 98
Seaboard Coart Line:
Scientific control of weeds, \*June 32
Short-line railroads:
What items of maintenance of way equipment are necessary?, (A) Sept. 70
Snow fighting:
Conrail battles snow, \*March 22
Soo Line Railroads:
Special problems feature epoxy repairs on bridge, \*Sept. 51

Southern Railway:
Uses Armco Super-Span to untie troublesome traffic tangle, \*July 18
Speno Rail Service:

Speno Rail Service:
Adds sixth rail grinder train, \*Jan. 41
On UP grinds to work-larden after it has been in the
track two years.
Station platforms:
Stabilizing track through, \*April 20

Taiwan Railway Administration:
Uses solid manganese frogs in rehabilitation program,
"June 26

gram, \*June 26 eweld: On-track detector car, \*June 28 Tele

On-track detector car, \*June 28
Ties:

Benefits to be derived from "post mortem" examination of, Jan. 54
Ties projected availability in event of massive rehabilitation project, \*Feb. 24
Tie practices in Canada not in turmoil, (L) Feb. 54
Compound to extend tie life, \*March 48
Criteria to be used when determining reclamation and re-use, (A) June 66
Recycling the wood crosstie: researchers develop and test laminated particle tie, \*July 26
Estimated crosstie requirements for Class 1 railroads 1979-1982 inclusive, \*Dec. 30
Rock Island handles renewals with Geismar model MRT, \*Dec. 35
Tie plates:

Tie plates: Importance of cant in, (A) July 88 White Pass & Yukon opts for use of plastic plates, \*Oct. 24

k: Causes of rough-riding, (A) July 72 Effect of wave action, (L) Nov. 15 Maintenance policies on Missouri Pacific, Nov. 22 large-scale rehab programs, \*Jan. 31

Track gangs:
What is needed to get the most productivity from?,
April 17
Bunching of on Missouri Pacific, Nov. 28
Terminal track maintenance:
Primer for the young supervisor, "July 20

Frimer for the young supervisor, Juny 20.

Track pans:
What is the best procedure to follow when installing and the track must be completely rebuilt, (A) June 72.

Track renewal trains:
Do they have a place on American railroads? \*March 32.

True Temper Corp., Railway Appliance Div.:
Develops rail-anchor test unit, "July 30
Tumouts:
Improvements and ideas offered by manufacturers,
"June 16
Railroads revamp practices to fit changing conditions, "June 20
Advantages of all-welded, (A) Aug. 58

Union Pacific:
Uses Speno grinder train to work-harden mil that has
been in track for two years, \*Feb. 53
Use of spring rail frogs, \*June 21
Turnout maintenance policy, \*June 21

What measures can effectively control on track ma-chinery, (A) Nov. 46 Weed and brush control:

Weed and brush control:

How good are railroad programs? "Feb. 14
Expanded use of "Spike" cited, (F) April 54
Scientific approach to control on Seaboard Coast
Line, "June 32
Practices on DM&IR, "Sept. 40
Practices on the Illinois Central Gulf, "Dec. 26
Weir Kilby Div.:
Develops solid manganese from, "June 16
Supplies solid manganese frog to Taiwan Railway
Administration, "June 26
Welded turnouts:
Use in CWR territory, "June 16
Long switch points used with, "June 16
Offered by Abex, "June 16
Advantages of using in CWR territory, (A) Aug. 58
White Pass & Yukon:
Opts for use of plastic tie plates on entire line, "Oct. 24

### **New Products** (\*) Illustrated item

Abex Railroad Products: Welded turnout, \*March 60 Abex Railroad Products:
Welded turnout, "March 60
Adams Equipment:
Truck-mounted winch, "Jan. 34
Aerodyne Development Corp.:
Portable beth skimmer, "Aug. 38
AFL Industries:
Oil/water separator, "Jan. 34
Fiberglass shelter house, "Dec. 39
Aldon Co., The:
In-track rerailer, Aug. 38
Alied Tool and Machine Co.:
Model 77 switch heater, "Oct. 35
American Hoist and Derrick:
Diesel-hydraulic locomotive crane, "March 60
Arthur Railroad Spikelock Corp.:
Arthur Railroad Spikelock Corp.:
Arthur Railroad Spikelock, "July 68
Atlantic Tie Spacer Co.:
Tie spacer, "March 41

Berminghammer Corp.: Vertical travel pile leads, \*March 40

Canron Railgroup: Automatic spike driver, \*March 41 Model EAH Tamper, \*June 36 Model GO-4 Trac Gopher, \*Sept. 60

Dowell Div. of Dow Chemical: M185 freeze conditioning agent, Dec. 39 DuP Hyvar X-L bromacil, \*March 60

on Co.: Electric switch heater control, Sept. 60

FMC Corp.: Model HSP-22 self-propelled crane, \*June 36 Fairmont Railway Motors, Inc.: Tie bed scarifier, \*March 43 W 119 Series B Tie inserter, \*March 43 Tie remover, Aug. 38

General Railway Signal: Flashing crossing signal, \*Oct. 35 Huck Manufacutring Co.: Model 940 "Powering verig" portable power source, June

J I Case: Four-wheel drive Unimog, \*March 42 Four-wheel drive Unimog, "March 42 Jackson Vibrators: Main-line switch tamper, "March 42 Joy Manufacturing Co.: Rotary screw air compressor, "April 37

Kenross-Naue, Inc.:
Terrafix filter mat, May 32
Kershaw Manufacturing Co.:
Five-position shear pin for Dual Tie Saw,\*Jan. 34
Model 42-2 switch undercutter, \*March 40
Model 12-13 rigid boom tie crane, \*June36
Koppers Co. Inc.:
Adhesive bonding agent (for use with poly plates),
\*Sept. 56

Little Giant Crane & Shovel Co.: Model SPR-48 locomotive crane, \*Sept. 56 Loctite Corp.: Rail-Safe, \*Sept. 56

Hail-Saire, Sept. 60 Loram, Inc.: Model 1015 Tie inserter, \*Sept. 60 Model 1013 cribbing machine, Oct. 35

Markal Co.:
Multi-colored paint sticks, \*Aug. 38
Marmon Transmotive:
Switch undercutter, \*March 43
Modern Track Machinery;
Clamp for Geismar-Stumec rail saw, \*Dec. 39

Oil Skimmers Inc.: Boom-mounted oil-skimmer, \*March 40

Park Rubber Co., Inc.:
Rubber gnade crossing, \*May 32
Plant City Steel Co.:
FAB-RA-CAST grade crossing, \*March 43
Epoxy flange way filler, \*Sept. 56
Plasser American Corp.:
General roadmaster, \*March 60
Power Parts:
Polyurethane grade crossing, May 32

RBI Industries: REMBED fastener, \*Oct. 35

Racine Rail Products:
Tie Saver, \*March 49
Railwor, \*March 49
Railwor, \*March 49
Railwor, \*March 49
Railwor, \*March 49
Straight hand-piece, \*Oct. 35
New grinder attachment, Oct. 35
Railwar, \*Maintenance Corporation Div. of Portec:
RMC Zapper, \*March 43
Two-tooth cribbing bucket, \*May 32
Black Belt insulation, \*Dec. 39

Safetran:
Model 5000 Track Car, \*March 42
Spirakut Products:
Contoured grinding disc, \*Aug. 38
Steelplank Corp.:
Steel ties, \*Sept. 105
Structural Rubber Products:
SAF&DRI rubber grade crossing, \*March 41

Taber's Welding Co.:
One-man rail rod, \*July 68
Teleweld, Inc.:
Model TT Sonrail rail flaw detector, \*July 68
Templeton, Kenly & Co.:
Hydraulic hose, \*Sept. 56
True Temper:
Bidim fabric base for use with T-Core, \*May 32
Truson Corp.

Truson Corp.: Rail measuring wheel, \*March 60

Uniroyal Chemical:
"Rail Pal" car wheel chock, \*June 36

Vapor Corp.: Cab-mounted air conditioner, \*May 32

Wacker Corp.:
Flexible shaft concrete vibrator, \*Jan. 34
Model WDH 84 vibratory roller, \*March 40
Model EHUB 10Y/110 breaker drill, \*June 36
Model GYR 75Y compactor, \*Sept. 60

Model CYR 75Y compactor, "Sept. 60
Warner & Swasey:
Improvements to 4450 rough terrain crane, "Jan. 34
Railroad Cradall, "April 37
Self-propelled C-660 Gradall, "Dec. 39
Western-Cullen Div., Federal Signal Corp.:
Portable derail, "May 32
Woodbine Corp.:
Rail conversion unit for truck cranes, "March 42

### (\*) Illustrated articles

Ahlf, R. E., \*April 20 Anderson, K. J., May 57, July 79

Anderson, K. J., May 87, July 79

Bacon, Ronald G., Dec. 51

Bailey, Ronald, \*Aug. 25

Barnum, C. W., July 72

Bartley, C. W., Aug. 60, Nov. 70

Bechly, D. S., June 64

Bentham, J. M., (L) Feb. 54

Berryman, Perry L., July 76

Binkley, W. O., Nov. 70

Blanchard, Leo C., \*Feb. 24, \*July 20, \*Oct. 27, \*Nov. 32

Blix, W. B., (L) Nov. 15

Bogese, Charles E., (L) May 69

Bowman, J. R., Sept. 88

Brakensiek, W. E., Aug. 44

Brueske, R.J., Jan. 54, Aug. 51

Bryant, N. D., June 58

Budd, B. P., March 96, Nov. 46

Burns, David R., \*March 32

Cerny, L. T., Feb. 34, Sept. 70 Chambers, J. W., Sept. 78 Chandler, J. E., May 57, Dec. 42 Chern, J., "July 26 Christiansen, George W. Jr., Sept. 31 Christiansen, M. C., Oct. 38 Compton, H. Newton, Oct. 57 Cors, B. E., "June 28, (A) June 52 Cummins, C. H., Jan. 48

Datisman, H. E., June 53 Davidson, J. W., March 76 Davis, D. R., Sept. 71 Davis, R. E., March 92 De Alba, T. E., Sept. 98 Dennis, R. E., Feb. 36, Aug. 51 Doorley, R. B., \*April 30 Drew, F. P., July 82 Dugan, R. A., Feb. 47

Eskengren, E., Sept. 88

Finnell, J. L., Sept. 99 Fite, G. C., Sept. 72 Fortney, E. O., March 82, Dec. 49 Ford, L. G., Aug. 44 Fox, John, \*April 17 Franzen, E. T., May 66 Frederick, E. R., March 76, Aug. 44

Gagne, J. A., July 73

Garland, R. G., Oct. 44 Gatch, J. N., Feb. 36, Dec. 50 Geimer, R. L., \*July 26 George, S. W., Aug. 58 Gupta, V. P., June 62

Gupta, Y. F., June C.

Haddix, F. E., March 66, Dec. 43

Hague, C. H., July 77

Hale, C. W., April 38, Nov. 65

Hamilton, W. R., Oct. 53

Harris, William J. Jr., (L) May 69

Hass, A. W., Jan. 50

Hay, W. W., (L) Dec. 18

Heebink, B. C., "July 26

Henderson, K. E., May 40

Howery, B. N., Sept. 72

Hunter, F. S., Feb. 40, Nov. 46

Huzy, J. H. Jr., Sept. 82

Intlekofer, C. F., April 41, Nov. 72 Izzo, S., Oct. 57

Jackson, Bertie, \*June 26 Jensen, John L., Jan. 38, Sept. 77 Jewell, A. H., Nov. 48 Jones, W. C., (A) June 45 Jones, W. J., May 34, Nov. 48 Jordan, E. C., March 74

Kaukola, B. W., Feb. 48, Nov. 50 Kennoch, W. C., Nov. 50 Kerr, Arnold D., (L) Dec. 17 King, B. J., Nov. 72 Kish, Andrew, \*Aug. 30 Kubacki, L. R., Oct. 41

Lancaster, J. Emmons, April 38, Nov. 68 Larson, R. E., June 70 Latkovich, D. J., Sept. 78 Laws, E. S., Oct. 46 Lawson, L. G., Jan. 54, Feb. 42, Mar. 68, June 68 Lepman, J. M., Oct. 54 Letro, J. M., Feb. 41, Aug. 58 Longerier, Chris, Sept. 96, Dec. 49

McKnight, R. W., "May 28 Mansheim, R. C., Sept. 88 Martyn, G. W., March 74 Mazarrella, Max. "April 24 Miller, C. J., (E) March 122 Mitchell, Maxwell B., Aug. 41 Mitchell, F. Stewart, (E) Dec. 8 Monaghan, A. E., June 71 Muelder, C. F., Feb. 46

Netherton, T. C., Feb. 46 Newby, Jack E., July 78

O'Brien, P. C., June 72 Opitz, W. A., April 44

Palmer, R. E., March 68 Papa, R. O., Aug. 41 Pember, R. W., Feb. 34 Prause, Robert H., \*Aug. 30 Prusak, B. R., Feb. 50, Aug. 47

Rees, F. L., Sept. 97 Reynolds, D. J., Sept. 94

Reynolds, D. J., Sept. 94
Schneider, Nick C., March 84
Schramm, J. C., Dec. 51
Sellers, R. T., Oct. 60
Shisler, L. H., Sept. 92
Sickels, M. E., Oct. 48
Simkins, R. J., July 84
Slatet, B. D., Oct. 52
Smith, B., Oct. 52
Smith, John H. June 72
Smith, John H. June 72
Smith, M. R., Mary 60
Smith, M. R., Mary 60
Smith, W. Dane, July 85
Snyder, Larry, (E) April 50
Stee, E. A., June 33
Stekman, R., March 92
Stone, H. A., May 46, Nov. 56
Sturman, J. J., March 92
Superfesky, M. J., "July 26
Sutherland, K. W., March 96, Dec. 49

Tharp, W. M., May 64 Thomas, Durwood D., July 88 Tidwell, K. D., Sept. 98 Tierney, L. R., Jan. 44

Uppal, A. Shakoor, \*April 26, (A) Oct. 41 Vander Leest, W. H., May 67, Dec. 42

Wackenbut, J. B., Jan. 54
Wages, P. L., "March 82
Waring, E. H., March 86, Dec. 48
Waring, E. H., March 86, Dec. 48
Waring, D. W., June 73
White, N., Dec. 50
Whitney, N. E., Jr., Sept. 84
Wilbourne, F. H., (A) June 58
Wilfong, James G., Oct. 57
Wilkinson, E. W., June 70, Dec. 51
Wilson, M. E., May 40, Nov. 65
Wood, W. D., Oct. 44
Wright, P. W., Dec. 54

Yaros, G., Feb. 48 Young, W. B., Aug. 52

Zehringer, J. J., March 84, Sept. 102

## Track and

# Structures

Volume 74

January-December 1978

### **General Article Index**

Illustrated articles What's the answer?

Editorial For your information Letter to the editor

Allegheny Drop Forge Co.:

HM insulated joint has tapered stiffening ribs on joint bar to cope with heavy traffic, \*June 50

American Concrete Cross Tie Corp.:

Designs and constructs low-cost machine to manufacture test concrete ties, \*Aug. 16

American Railway Engineering Association:

Program for 77th annual technical conference, Mar.

American Railway Engineering Association Committee visits FAST track, \*July 35

Committee visits FAST track, \*July 35 Amtrak: See Northeast Corridor Improvement Project. Anchors, rail:

Compression type tested on Santa Fe, \*Oct. 32 Armco.: Furnishes corrugated steel opening to replace burned-out timber-pile trestle. \*Feb. 42

Armco:
Single slope building structure for ICG paint shop,
"June 32 & Santa Fe:
Atchison, Topeka & Santa Fe:

Concrete ties perform well in test section at Leeds, Ill., \*Aug. 21 Ill., "Aug. 21
Missouri River bridge gets epoxy-bonded prestressed
slab deck, "Sept. 40
Tests compression rail anchor, "Oct. 32
Atlantic Railroad Supply Co.:
Marketing OTM pick-up unit, "July 28

Ballast:
What factors determine whether to clean the entire
ballast section or just the shoulders (A) May 74 The Ballast Story:

I—The fundamentals, \*Oct. 26

The Ballast Story, part II, The alternatives to fouled ballast, \*Dec. 2

Bank restoration:
What methods are used when have eroded, (A) Jan.

What methods are used when have closes, who solves the sale sale sale was of Chicago:
Uses in-track welding for main and yard tracks, \*Mar. 40
Blakeslee Prestressed, Inc:
BW 2 PSC ties, a total of 15,140 for Chessie System, \*Aug. 22
Specs of company produced concrete tie given, Aug. 29

29
Bostitch Inc.:
Model T35 pneumatic tacker for reshingling huge
warehouse, "Oct. 31
Boston & Maine:
Uses computerized project-management system for
Bridges: special needs, "July 36

special needs, "July 36
Bridges:
Factors to determine the amount of emergency bridge material, (a) Jan.40
Method of installing large diameter steel pipe under bridge that is to be filled (A) Jan. 42
What percent of a timber pile should be decayed belore posting, (A) Jan.46
SCL replaces burned out timber pile trestle with corrugated steel opening, "Feb. 42.
Most effective method of securing bridge ties to the steel deck, (A) Feb. 46
Best methods for changing-out ties on ballast-deck, (A) Feb. 62
Epoxy injection used to solve problem of surface

Epoxy injection used to solve problem of surface cracking and consolidation in pier on BN, \*Mar. Maximum amount girder span can be lifted, (A) Mar.

92
Necessity of keeping records other than the bridge book, \*May 61
What to look for when inspecting a concrete trestle?

Deck renewal with prestressed slabs, "Sept. 40 Bin-wall reduces fire hazard on old timber trestle, "Sept. 58

"Sept. 58
When necessary to repaint steel bridges? (A) Oct. 46
Bridge design practices on BN, "Nov. 30
Dealing with those higher approaches, (A) Nov. 44
Epoxy repairs for wide crack in concrete pier, "Dec. 28
Bridges and buildings:
Story of Harry Fitzhugh: The making of a supervisor,
Aug. 34

Aug. 34
Bridge crew gets some fatherly advice, Oct. 29

Bridge crew gets some naturally across, and partition consultance of the proper materials for wall and partition construction, (A) Feb. 55

New steel paint facility for ICC. "June 32

What specific features of building structures should be investigated during annual inspections, (A) July 76

Roof on huge RR warehouse reshingled with power tackers, "Oct. 30

lington Northern:
Uses epoxy to solve problem of disintegration in
bridge pier, "Mar. 38
Use of heat-treated and alloy rail on curves, "June 35
Joint effort for producing CWR from long rails, "July
24
Pushes grade crossing improvement program, "Sept.

Charting direction; keeping on course, "Nov. 22 MW practices reflect merger factors, traffic growth, "Nov. 24 Design advances, railroad needs dicatate bridge practices, "Nov. 30 Canron Railgroup:
P-811 self-contained track laying machine lays concert tes on NEC, "Sept. 32
CF&I Steel Corp:
Offers chrome-moly rail for curves, "June 35 New long rail butt-welding plant, "July 78 Chessie System:

New long rail butt-welding plant, "July 78
Chessie System:
Uses machine designed to pick up released OTM in a continuous operation over track, "July 28
Test section for concrete ties performs well, "Aug. 21
Chicago & North Western:
Stabilization fabric solves problem along with ballest undercutting and cleaning,"
Story of a railroad on the move, Oct. 58
Chicago, Rock Island & Pacific:
Bridge engineer Herman Solarte spots defective structural member in CTA overhead structure,
"Feb. 27
Uses "Super-Trucks" to increase M/W productivity,

Uses "Super-Trucks" to increase M/W productivity,
"May 46

"May 46
Chicago Transit Authority:
Rock Island bridge engineer spots defective structural members in overhead bridge, "Feb. 27
Concrete ties:
Contract awarded for 400 miles to be installed in NE
Corridor, "Jan. 36
The paradox of the concrete tie, (E) Aug. 7
Prestressed concrete tie: The U.S. story from the beginning, "Aug. 16
Progress report on service tests." Aug. 20

ginning, "Aug. 16 Progress report on service tests, "Aug. 20 What's happening among the concrete tie manufac-turers, "Aug. 28 Placed by track laying machine, "Sept. 32

Con-Force Costain:
Testing of CC244C concrete ties, \*Aug. 20

Testing of U.244C concrete ties, "Aug. 32.
Continuous Welded Rail:
What causes batter at butt welds in? (A) Aug. 52.
Procedure to use when transposing, (A) Jan. 60.
Repairing batter at welds in, (A) May 69.
What is the best method for correcting a tight rail condition, (A) May 70.
As placed in the NEC, "Sept. 27.

Calverts:

Method of installing large diameter steel pipe under bridge that is to be filled (A) Jan. 42

Most common cause of failure, (A) Feb. 36

ves: Fitting grinding policy to rail-wear problem on, \*Feb. 34

Department of Transportation: Report on background and recent developments at FAST, \*Mar. 26

Duluth, Missabe & Iron:

Uses stabilization fabric under unstable spur track built on red clay, "June 44
Fairmont Railway Motors:
Tie shears and tiebed scarifiers cut old ties and prepare new beds on Frisco System, "June 31
FAST (Facility for Accelerated Service Testing):
Review and update report on performance of frogs, switches, guadr ails, "Sept. 38
Background facts and recent developments, "March

Review and update of rail metallurgy tests, \*May 57 Developments at FAST test track, \*Oct. 21

neview and update of rail metallurgy tests, "May 57 Developments at FAST test track, "Oct. 21 Interim report: wood vs concrete tie, "Nov. 34 Fastrak Rail Service:

Track-Master Rail System based on backhoe Federal Fastine, "Aug 30 ration:

Those FRA track standards—again (E) Jan. 6 Developing program for evaluating M/W machinery, June 48 More funding for track upgrading, Sept. 98 Florida East Coast:

Uses roadway stabilization fabrics to solve problems of pumping track, "Jan. 24 Longest installation of concrete ties in the U.S., GAF Corp.:

GAF Corp.: Fiberglass shingles for RR warehouse, \*Oct. 30 Goodyear Rubber Co.: Rubber slab grade crossings, \*Sept. 43

Rubber slab grade crossings, "Sept. 4.5
Grade crossings:
Federal grade crossing program: AAR pushes hard to
speed rate of installation, "May 26
Case history report looks at progress in five states,
"May 32
RPI task force pushes grade crossing safety programs,
"May 36

Private State of the Control of the Control of the Control of the Control of Control of

Steel's rail mill in Pueblo, Coto., "July 24 Holley Engineering Co.: Provides "Scrapper" material pick-up unit for Ches-sie, "July 28 Illinois Central Gulf: Weed and brush control practices, "Jan. 26 Steel building for freight-car spray paint shop, "June 20

32 Steel bin-walls solve trestle problems, \*Sept. 58

Steel bin-walls solve treatle problems, "Sept. 30 Insulated joints:
Getting the most use from, "Feb. 38 Jackson Vibrators:
First model 6000 tamper turned out at new plant at Baxter Springs, Kans., "Mar. 45 Model 6500 production tamper also works through turnouts, "Nov. 32 Kershaw Manufacturing Co.:
Hoots Kershawman at its headquarters, "Mar. 33

Hosts Kershawrama at its headquarters, \*Mar. 33 Tie handlers spot new ties on Frisco System, \*June

28
Maintenance of way:
Strong programs seen for 1978, \*Jan.18
Update on 4-R Act funding, \*Jan.18
What management expect from, and what it expects from management, Jan 29
Using track jacks without accidents, \*Feb. 24
Getting sufficient on-track time for track jobs, (E)
Feb. 8

Feb. 8

Perspectives offered by use of track renewal train, (E) Feb. 8

Use of "Super Truck" concept on Rock Island to effect greater cost savings, "May 46

Everpresent problems on curved track are worse today, "June 35

Stabilization fabrics: Where they are in railroading today, "June 42

Vertical wear in wheel flanges as cause for derail-ment? (A) June 56 Federal penetration: How wide, how deep? (E) July

Small multipurpose units form tie unloading system,
"July 32
Directory—Railroad Track Contractors, July 41
What causes vertical flange wear in wheels; does this
contribute to possible derailments at facing-point
switches? (A) July 81
In inspecting track from a moving train, what are indications of line irregularity? (A) July 90
Story of Harry Fitzhugh: The making of a supervisor,
"Aug. 34
What equipment on hand and ready for clearing

Just around that next curve in M/W..., \*Oct. 24 Interview with vice-president, engineering and maintenance, BN, \*Nov. 22 Interview with top engineering officers, BN, \*Nov.

24
What measures can be taken for correcting slope failures, (A) Dec. 49
FRA program aimed at M/W machine evaluation, June 48
Backhoe is basic unit for family of track-working attachments, "Aug. 30
Self-contained track laying machine on Northeast Corridor, "Sept. 32
How often and in what parts should push cars be inspected? (A) Oct. 48
Equipment policy for short lines, (A) Nov. 48
Emon Transmotive:
Swith undercutter on Northeast Corridor, "Sept. 78
ssouri Pacific:

Missouri Pacific:

Missouri Pacific:

Although Sandard Sa

Big undertaking brings some one consumer 27
Track-laying machine, first in U.S., puts in concrete ties, "Sept. 32
Contract awarded for concrete ties, Jan. 36
Osmose Railroad Division:
Epoxy repairs crack in bridge pier, "Dec. 29
Ozark Railway Supplies:
Spike "Re-CLA-Mer" reclaims spikes for Frisco

adroi:

Model 601A heavy-duty fastening for concrete ties,

Aug. 23

Clip types PR 401A and PR601A under test on Santa

Fe for holding track on curves, \*June 39

PBR Inc.: Secmafer undercutter/ballest cleaner for Northeast Corridor, \*Sept. 28

People:
Apprehension over mangement's role, (L) Oct. 12
Plant City Steel Co:
Rembed device for mating with rail-holding clips in
concrete ties, "Aug. 25
Plasser-American Corp.:
Dedicates plant expansion, "Jan. 28
Model R M76 undercutter/cleaner and dual-operator
switch tampers on the Northeast Corridor Project, "Sept. 28

Pollutio Who is responsible for maintaining diesel runoff treatment equipment? (A) Sept. 80 Compliance with EPA regulations, (A) Nov. 63 Portec (Railway Products Div.): Sidewinder fastening system for concrete ties, with Poly-Pad polyurethane tie pad, \*Aug. 23 Anchor-Bioc fastening for concrete ties, \*Aug. 24 Curv-Bioc fastening system used on 2000-foot section in Sants Fe experiment, \*June 3000-foot section

Rail: In Santa Fe experiment, "June 39

Rail: In Santa Fe experiment, "June 39

Fitting grinding policy to rail-wear problem on curves, "Feb. 34

Using yelding to repair batter at welds in CWR, Mar. 36

Gage to use when relaying, (A) Mar 95

Best way of maintaining gap between rails on track scales and approach rails? (A) June 66

CWR from long rails at newest butt-welding plant, which is the gage and field sides of relaid welding cropped rail be reversed, (A) July 80

Where should rail lubricators be placed, and what are their actual performance characteristics? (A) Oct. 37

Under what conditions should rail on curves be transposed? (A) Nov. 70

Lefective rail: Cost effectiveness of detection, control, Dec. 26

Vertical 'S' curve guides CWR string to subway tunnel, "Dec. 31

Rail Grinding:

Fitting policy to rail-wear problem on curves, "Feb. 34

What factors determine when rail should be surface ground out-fo-face, (A) Feb. 83

Fitting policy to rail-wear protein on curves, "Feb. What factors determine when rail should be surface ground out-fo-face, (A) Feb. 66
Rail Metallurgy:
Review and update of tests at the FAST, "May 57
Railroad Concrete Crosstic Corp.:
Capacity and potential capacity of Jacksonville, Fla. plant, "Aug. 28
Rails Co. The:
Type C Flexiclip fastener for concrete ties, "Aug. 24
Compression on rail anchor No. 43-A tested on Santa Fe, "Oct. 32
Railway Automotive Management Assoc.:
History of Fleet Manager's Manual, "May 54
Railway Engineering-Maintenance Suppliers Association:

tion:
Forms committee to cooperate with FRA M/W
machine evaluation program, June 48

machine evaluation program, June 48
RB Industries:
Handles small as well as large concrete tie quantities, "Aug. 29
Roadbed stabilization fabrics:
Answer to pumping track problem on Florida East
Coast Railway, "Jan. 24
Roadmasters" and Bridge & Building Associations:
"Eye-openers" at the September conferences, (E)
9
Conference Report: Technology to motivation, \*Oct.

Elections of officers, \*Oct. 23

Roadway machines:
What parts of roadway machines are subject to the most frequent failures? (A) Feb. 68 most frequent failures? (A) Feb. 68
Rock Island:
Rock unloads crossties from gondolas using new
system, \*July 32

Safety:
Use of hand-operated track jacks, \*Feb. 24
Rock Island bridge spots defective structural member
in CTA bridge, \*Feb. 27
All employees should be track inspectors, (E) March

All employees should be track inspectors, (E) march
What conditions would require a slow order, and
what would be the set speeds? (A) July 82
Inspection of cables on cranes and pile drivers. (A)
Aug. 49
How effective are methods for fireproofing vertical
surfaces of timber trestles? (A) Sept. 78
Track safety standards at crossroads. (E) Nov. 9
FRA track safety meeting. (E) Dec. 9
New look at accidents, the hidden costs, individuals
responsibility. Dec. 38
Extent track forces should be familiar with spills of
hazardous chemicals? (A) Dec. 42
St. Louis-San Franciso:
Centralized control of tie gangs boost efficiency.,

Santa Fe-Pomero

ta Fe-Pomeroy: Testing of their Gerwick RT&S ties, \*Aug. 20 ta Fe-San Vel: 1.1 million concrete

Santa Fe-San Vel:

1.1 million concrete ties for 400 miles of the Northsearch Corridor project, "Aug. 26
Sept. 36
Seaboard Coast Line:
Replaces burned-out timber trestle with corrugated
steel opening. "Feb. 42
Modern methods of construction used in constructing
yard at Waycross, Ca., "Mar. 20
Reshingling of huge warehouse roof, "Oct. 30
Southern Railway:
Uses stabilization fabrics at turnouts, "June 43
Supervision:

Uses statistical to the state of the state o

SCL uses in construction of new yard at Waycross, Ga., \*Mar. 20

Thrall Car Mfg. Co: Special cars for concrete ties, \*Sept. 33

Special cars for concrete ues, sept. 3.

Ties:
Economics when bringing yard tracks up to FRA class I condition, (A) Mar. 65
Systems of tie dating, (A) May 66
When would a full set of switch ties be renewed at one time? (A) June 60
Wood vs concrete on Fast, Nov. 34
Tie producers look at their problems, \*Dec. 34
Track:

ck:
The burgeoning track-research business (E) Jan. 6
Those FRA track standards—again (E) Jan. 6
Getting the most from insulated joints, \* Feb 38
Proper procedure for putting bend in stock rails, (A)
Feb. 48

The standard for advantageout ties on a ballast-deck

Feb. 48
Best method for changing-out ties on a ballast-deck
bridge, (A) Feb. 62
Avoiding "low-joint" memory, (A) Mar 77
Today's curve problems, "June 35
What fastening system for use on curves? Santa Fe
seeks the answer, "June 37
Insulated joint has high modulus at center, "June 50
How often should engineering check line and grade
on hump-retarder classification tracks? (A) June
60

Under what circumstances is the use of gage rods justified on curves? (A) Dec. 47

Track gangs: Centralized control of tie gangs boosts efficiency,

"June 28
What are the advantages of a section gang? (A) Nov.
58
Transit Products Co.:

Transit Products Co.:

Hixson concrete tie fasterner, "Aug. 25

True Temper Corp. (Railway Appliance Div.):

Cliploc tie fastening system, "Aug. 24

Use of insulated "Cliploc" track fastening system on

FEC concrete ties, "Aug. 19

Tunnels: Remedies for leaks in, (A) Mar. 68

Remedies for leaks in, (A) Mar. 08
Union Pacific:
"Safemobile," travelling classroom for safety courses,
"July 31
Unit-D.E. Inc.:

DE Springelip for concrete ties, \*Aug. 25
Weed and brush control:
Practices on Illinois Central Gulf, \*Jan. 26
Role of the contractor applicator, \*Feb. 30

Welding: Welding:
Using to repair batter at welds in CWR, \*Mar. 36
Used by Belt Railway of Chicago for main and yard
tracks, \*Mar. 40
Weed and brush control:
Herbicide applicators adapt to changing times
through new association, July 30

Whiting Corp:
9TM Trackmobile used as a donkey engine in tie
unloading system on Rock Island, \*July 32 Winter: 1977-78—winter of torment, \*Mar. 28

### **New Products**

### (\*) Illustrated item

AEF Aluminum Structures: Modular aluminum walkways, bridges, and towers,

AEF Aluminum Structures:

Modular aluminum walkways, bridges, and towers,

Nov. 42

AFL Industries:
Oil stop valve, \*Jan. 39
Enhanced gravity separator, \*Jan 39

Armoo Building Systems:
Medium-size 'baseline'' buildings, Aug. 67

Roof crimper for 'Steelox' roof panels, \*Aug. 67

Roof crimper for 'Steelox' roof panels, \*Aug. 67

Now small TEC-LINE buildings, \*Sept. 59

Celanese Fibers:
Miral 500X woven polypropylene fabric for ground stabilization, Aug. 65

Citation Mig. Co.:
Model 412 pressure washer, \*Aug. 67

Conweb Corp., Environmental Products:
Portable separator system, "May 39

Electro-Mechanical Components, Inc.:

"Mindrineller" hardness testing kit, \*July 72

Gesmodel BCAT-Al. two-piece combination level and gate, \*July 74

Model DN-80 adzing machine, \*Sept. 59

Gor-Vue Corp.:
Welding helmet \*Jan. 38

Gor-Vue Corp.: Welding helmet, \*Jan. 38

Hewlett-Packard Co.: Electronic distance meter, \*June 52 Model HP 7225A graphics plotter, \*Nov. 42

Macro-12 English and metric measuring caliper,

"July 72

Indicating Catiper Co.:
Macro-12 English and metric measuring caliper,
Macro-12 English and metric measuring caliper,
"July 72

Intima Inc.:
Rail fastening device, \*Dec. 40
Jackson Vibrators:
Model 6100 tamper, \*March 61
Model 126 tie extractor-inserter, \*March 61
Kershaw Manufacturing Co.:
Tie Remover and rodary scarifier, \*Sept. 62
Loram Maintenance of Way:
3-car grinding unit, March 61
Martin-Decker Co.:
New line of heavy-duty, electronic track scale, \*July 74
Meadowbrook Enterprises, Ltd.:
Concrete panel grade crossing, \*May 59
W. R. Meadow, Inc.:
Non-metallic grout, \*May 59
Mohs Seaplane Corp.:
Reflect-O-Strip, \*May 59
NVF Co.:
Special track insulation kits, \*Dec. 40
Ozark Railway Supplies:
Spike Re-CLA-MeR, \*March 61
Racine Railroad Products:
Hand dispenser for Tie Savr, \*Jan. 38
"Trak-Kut' abrasive rail-cutting saw, \*July 74
Improved track scanner, \*Nov. 42
Railway Maintenance Corp., Portec Div.:
Model BJC joint installation cart, March 61
Hydrostatic-drive locomotive, \*June 52

"Sidewinder" concrete and wooden tie fastening system, \*Sept. 59
Track-mounted rail vibrator and tow car, \*Sept. 62
Railway Track-Work Co.:
Model UT-31 off-track parts truck, \*June 52
Reel Industries, Inc:
"Armorion" woven plastic tarpaulin material, \*July 74
SPS Technologies:
C180 flanged fasteners, Aug. 67
Safetran Systems Corp.:
Aluminum tie tonga, \*Dec. 40
Lightweight Timber carrier, \*Dec. 40
Rail aligning tool, \*Dec. 40
Sanchem, Inc.:
NO-OX-ID win Per.

chem, Inc.: NO-OX-ID WB fire resistant tie coating, \*Sept. 59

Sanchem, inc.:

NO-OX-ID WB fire resistant tie coating, \*Sept. 59

Spray Services Inc.:
Herbi hand-held weed sprayer, \*Feb. 45

Teleweld Inc.:
CWR Heating Car, \*July 72

Templeton, Kenly & Co.;
Flatjack cylinder jacks, \*May 59

Simplex low-proble, short-stroke hydraulic lifting cylinders, \*Sept. 59

Unit Rail Anchor Co.:
MH flange lubrication system, Feb. 45

U.S. Thermit Inc.:
Lightweight rail grinder, \*Feb. 45

Wacker Corp:
High-frequency vibrator, \*Feb. 45

All-angle drill, Feb. 45

Western-Cullen-Hayes

Western-Cullen-Hayes

Automatic derail signal, \*Dec. 40

The Woodbine Corp.:
Fatented limerfly ash injection slurry, \*June 52

### (\*) Illustrated articles

Adams, J. I., Feb. 46 Amos, Charles L., \*May 26 Anderson, K. J., (A) July 90 Anguiano, John S., March 66

Banghart, D. L., (A) Oct. 37

Barnes, E. L., March 82A

Bartley, C. W., (A) June 70

Bechly, D.S., Jan. 48, Oct. 54

Bell, R. A., (A) Nov. 55

Berkshire, H. B., (A) Aug. 42, \*Oct. 24

Bernynnan, Perry L., (L) Jan. 11, \*Sept 44

Blanchard, Leo C., \*Feb. 24

Born, J. O., (A) Oct. 43

Bradley, K. W., (A) Aug. 53, (A) Oct. 42

Bridges, V. W., (A) Aug. 53, (A) Oct. 42

Britton, G. C., Jan. 40

Brakensiek, W. G., Aug. 62, \*Oct. 26

Burns, David R., \*Oct. 26, \*Dec. 22

Buchanan, H. E., (A) June 68

Calhoun, John C., Aug. 34, \*Sept. 64, Oct. 29, Dec. 38
Campbell, J. E., Feb. 34
Carr, James M., (A) Sept. 92
Cary, N. M., (A) Aug. 60
Cerny, Louis T., (A) July 96
Cessna, T. A., (A) Oct. 34
Chandler, J. E., (A) Dec. 48
Cosse, J. D., Feb. 46
Covington, D. E., March 66
Covington, D. E., March 67
Cowart, Linton E., \*Feb. 30
Crawford, D. E., (A) Aug. 51
Cruse, W. J., \*Sept. 38
Cummins, C. H. (A) Oct. 48

Davidson, J. W., (A) Oct. 50
Davis, D. R., (A) Aug. 48, (A) Nov. 48
Davis, R. E., (A) June 76
Davis, Thomas, \*July 36
Dean, A. J., May 61
Dean, Francis E., \*Nov. 34
Dennis, R. E., March 77 (A) Dec. 52
Diamond, L. P., (A) Sept. 72
Drew, R. P., Feb. 68

Elder, Malcolm B., Feb. 48 Ellis, J. S., Jan. 48 Eskengren, E., Feb. 66

Finnell, J. L., June 66 Forcier, B. R., Feb. 67 Fortney, O. E., (A) July 82

Garland, R. G., (A) July 84 Gatch, J. N., (A) July 83

Haddix, F. E., (A) July 86
Hale, C. W., (A) June 72
Hall, L. B., Feb, 88, March 78
Halley, W. E., (A) Sept. 82
Haven, Peter, \*Sept. 40
Henderson, K. E., \*Feb. 38, (A) June 56
Hertog, J. H., (L) May 14
Hinson, J. E., May 66
Hobart, W. E., March 70
Hunter, F. S., (A) June 69

Intlekofer, C. F., (A) June 73 1zzo, S., (A) June 62

Jeffcoat, Robert L., (A) June 56, (A) July 81 Jordan, S. L., (A) Dec. 46

Keeling, B. R., Jan. 46 Kerns, K. N., (A) July 76 King, I. L., (A) Nov. 63 Kish, Andrew E., "Nov. 34 Krupa, G. E., (A) Aug. 54 Kucera, W. J., "May 57 Kulick, K. L., (A) Nov. 58

Lancaster, J. E., (A) June 71 Langiotti, Pete, (A) July 78 Larson, R. E., May 61 Lee, Edward B., July 30 Letro, J. M., (A) Sept. 66 Low, A. C. Jr., March 82B, (A) Oct. 35

Magee, G. M., \*Aug. 78
Malhotra, B. K., May 70, 74
Mansheim, R. C., (A) Aug. 60
Martens, R. J., (A) Oct. 35
Matthews, R. L., (A) Aug. 45
Maxwell, G. L., (A) Sept. 66
Maynard, A. L., (A) Sept. 66
Maynard, A. L., (A) Sept. 66
McBride, David, March 71
McClarnon, L. M., (A) Nov. 50
McCuigan, F. H., (A) Dec. 49
McGuire, Bob, (A) Sept. 78
Miller, C. J., (L) Jan. 10
Miller, R. H., (L) May 14

Nitzschke, R. D., Jan. 42 Nyland, B. W., Feb. 56

Parker Jr., A. C., (A) Sept. 97 Peckover, F. L., (A) Dec. 53 Pember, R. W., May 75 Pepple, L. W., (A) Sept. 88 Prusak, B. R., March 82A Pullem, R. K., Jan. 80

Robinson, E. L., (A) Dec. 50 Rohweder, Daniel, R., (A) June 60 Rump, J. H., Feb. 55 Russell, J. K., May 69

Schifalacqua, M., March 68
Schultz, H. E., (a) Nov. 45, (A) Dec. 43
Schulz, D., Feb. 68
Seep, T. H., Feb. 55
Sirckles, M. E., March 95
Simkins, R. I., (A) Nov. 45
Smith, M. R., (A) June 71
Smith, R. E., Feb. 55
Steele, R. J., "May 57
Steele, R. J., "May 57
Steele, Roger, K. (A) July 83
Stone, H. A., (A) Nov. 62
Storek, John H., (L) Jan. 10
Sutherland, K. W., (A) July 83

Tharp, W. M., (A) June 62 Thomsen, E., Feb. 34 Thornton, R. T., (A) July 80 Turner, C. R., (A) Aug. 78 Turner, D. G., (A) Nov. 43

Uppal, A. Shakoor, March 92

Van Bergen, A. B., (A) Nov. 60 Vander Leest, W. H., (A) July 84 Vitale, Joseph J., (A) Sept. 76

Wages, P. L., May 71
Watts, J. H., Jan. 54
Weber, John W., \*Aug. 78
White, J. G. (L) May 14
Wilkinson, E. W., (A) Oct. 35
Wilson, M. E., (A) June 69
Wilson, N. A., (A) June 69
Winter, G. H., Feb. 62
Wood, A. J., Jan. 40

Young, W. B., Feb. 48 Yund, C. G., (A) Dec. 47

## Track and

# Structures

Volume 75

January-December 1979

### General Article Index

Illustrated articles What's the answer? Editorial Letter to the editor

Spotlight

Aeroquip, Inc.:
Lightweight hose combining elastomer with Hi-Pac
reinforcement, \*Oct. 48
American Railway Engineering Association:
Program for 78th annual technical conference, Mar.

30

Committees oppose FRA project, view new track equipment at Shreveport meeting, \*Mar. 33

Committee uprising at Shreveport, (E) Mar. 98

Moves Headquarters to Washington, D.C., (E) Apr. 8

Annual technical conference shows accommodation with government and girding for change, \*Apr. 24

nmittee continues plant tours, attends machine demonstrations, \*Jul. 37

Amtrak:
Buildings get aluminized steel roofing, \*Feb. 31
Flat car mounted Gradall used in ditching, \*Feb. 30
Anner Railroad Builders, Inc:
Contractor looks at past, present, future, \*Jul. 22
Atlante Railroad Supply Co.:
Exhibits keyed, wedge action spike assembly, \*Oct.
24.3

ullast: "
What FAST tests show to date, "Jan. 26
The ballast story: cost justification among alternatives, "Jan. 28
Determining depth of cut beneath ties in undercutter/cleaner operations, (A) Jan. 62
Restoration of standard track sections, (A) May 69
Matching M/W practice to required use of track: ties and ballast, "Oct. 81
Benefits of compacting machines, (A) Oct. 124
sessemer & Lake Erie:
Safety, productivity on bridge deck renewal, "Jul. 40
izzard:

Battling the blizzard of '79, \*Mar. 26

Battling the blizzard of 19, 2712.

Bridges:
Precautionary steps for unit train traffic, (A) Jan. 45
When filling timber trestles, what portions of the old
structure should be removed, (A) Jan. 57
Advantages of composite steel & concrete construction in, (A) Apr. 55
Functions of guardrails on, (A) May 70
Considerations in replacing timber trestles, (A) Jun.
59

59
Fractured bridge supports stabilized, "Jul. 28
Safety with productivity in deck renewal, "Jul. 40
Tale of two bridges on BN, "(S) Jul. 70
Advantages of panel method in deck renewal, (A) Jul.

When can a trestle no longer be repaired, (A) Oct.
118
Bridges and Buildings:
Amtrak buildings get aluminized steel roofing, °Feb.

Does your B&B department make regular inspections for fatigue and failure, (A) Sept. 58

for fasigue and failure, (A) Sept. 58
Bridge Fastenings:
Types available for field connections, (A) Jun. 56
Bridge Inspection:
Timber bridges inspection primer, \*Sept. 48
Bridge Painting:
When is it desirable to paint existing steel rai\_road
bridges, (A) Mar. 88
Burlington Northern:
Tale of two bridges, \*(S) Jul. 70
Callette-Orin coal line nears completion, \*Aug. 39
Caloweld Inc.
Caloweld Inc. Caloweld, Inc.: Introduces

owein, Inc.: Introduces new shear for in-track welds, \*Oct. 139 near-Textron: Equipment displayed at REMSA '79, \*Nov. 30

Canadian National Railroad:

Case Uninog.

Demonstrates debris cleaning tractor with sweeper broom, \*Oct. 46

Central Vermont:

Central vermont:

Low power electric switch heater avoids runoff, \*(S)

Apr. 50

CF&I Sicel Corp.:

Pueblo rail mill project nears completion, \*Jan. 22

Pueblo rail mill project nears completion, 'jam. 2 Chicago & North Western: Coal, route upgrading shape 4-R plans, \*Jan. 32 On/off track excavator, \*(§) May 56 Chicago, Rock Island & Pacific: M'W projects scheduled by computer, \*Feb. 26 Chicago, South Shore & South Send: Cubes mobile hydraulic in-track welder, \*Jan. 30 CP Rail.

St. Luc yard improvement passes midway mark,
\*Sept. 44

nputers: Rock Island schedules M/W projects by, <sup>b</sup>Feb. 26 w important are computers on track geometry cars, How important are comp Aug. 48

Survey among users reveals experiences, \*Aug. 24
Features of pads, ballast, joints and transitions in,
\*Aug. 30

Conrail?

4-R funded rehabilitation changes direction, \*Jan. 38
Continuous Welded Rail:
South Shore uses mobile in-track welder, \*Jan. 30
Does maximum degree of allowable curvature vary
between lines, (A) Feb. 52
Change out machine upgrades to CWR in continuous
flow, \*Aug. 40
Modern plant spurs CN renewals, \*Oct. 98
CP Rail:

CP Rail: Radar guns check train speed, \*(S) Jun. 50

Radar guns creek that Curves:

Cirves:

Listere still a place for stringlining in determining corrections in alignment. (A) Feb. 38

What signs indicate gage widening on, (A) Aug. 55, (A) Sept. 63

Gage corner problems reduced by 1:14 cant, (A) Nov. 49

De Leuw. Cather/Parsons:

De Leuw, Cather/Parsons: Inertial Surveying along the Northeast Corridor,

\*Apr. 38
Elgin, Joliet & Eastern:
Modern trends applied on grade crossings, \*Dec. 63

Modern trends applied on grade crossings, \*Dec. 63
Embankments:

What is the most effective way of overcoming water
pockets in, (A) Feb. 40
Fairmont Railway Motors:
Exhibits self-contained, self-propelled rail grinding
system, \*Oct. 43
Introduces re-designed tie shear, \*Oct. 43
Tie plug inserter includes larger capacity fuel tank,
\*Oct. 44
\*Economic Aliendow at REMAS A\*70
\*ECONOMIC Aliendow at

Equipment display at REMSA '79, \*Nov. 30

Equipment uspays ...
Fararco:
Multipurpose on/off track system features variety of attachments, \*Oct. 44
FAST (Facility for Accelerated Service Testing):
What ballast tests show to date, \*Jan. 26
What top engineers say of results, Mar. 54
Plans set for major rebuilding of FAST track sections,
\*\*in. 48

How useful is FAST, (E) Jul. 7 RPI tours FAST, \*Sept. 50 Federal Railroad Administration:

leral Railroad Administration: Qualifications needed to inspect track to safety stan-dards, (A) May 75 Proposed new track safety standards, \*Oct. 60

Filter Fabrics:

What precautions prevent damage to fabrics from tamping tools, (A) Feb. 56
Investigating and choosing engineering filter fabrics,

"Jun. 25

Defers spot maintenance at MoPac, Jun. 28
Fabrics counter soil problems at Southern yard, \*Jun.

Fabrics counter soil problems at Southern yard, \*Jun. 34
Fabric stabilizes power plant track, \*(S) Jun. 50
ade Crossings:
Federal money for crossings: It's there if you can get
it, (E) May 9
\*780-million for grade crossing safety, \*May 28
Crossing work and the public: Avoid contention,
extra costs, \*May 35
Guide to modern grade crossing surfaces, May 42
Largest rubber railroad grade crossing \*(S) May 56
Thermal power gates, flashers, \*(S) May 56
Available devices for keeping crossing tight, (A) Jun.
86

66
Modem trends applied on EJ&E, \*Dec. 63
Fundamentals of track, roadbed design and construction observed, (A) Dec. 78
Guardralls:
What functions on bridges, (A) May 70
Hovey & Associates, Ltd:
Exhibits horizontal air curtain switch protector, Oct.

139

Illinois Central Gulf:
Holds to big funding plans, but changes details, \*Jan.
INTMA, Inc.:

INTMA, Inc.:
Develops resilient fastener for hard and soft wood
ties, \*Oct. 46
Jackson Vibrators, Inc.:
Exhibits model 3100 ballast compactor, \*Oct. 42
Demonstrates one man operation of tie remover/
inserter, \*Oct. 46
J.I. CASE Co.:
Equipment display at REMSA '79, \*Nov. 30
Kershaw Manufacturing Co.
Equipment display at REMSA '79, \*Nov. 30
Lasers:

Equipment display at homory, 19, Lasers:
What applications for use in correcting track alignment, surface, (A) May 68
L.B. Foster Co.:
CWR reclamation provides profit, training, \*May 45
Long Island Railroad:
Small in size, big in M/W thinking, \*Sept. 20
Loram Maintenance of Way, Inc.
Whole tie extractor uses ballast displacing scarifier teeth, \*Oct. 44
Electronic measurement of rail corrugation, \*Oct. 93

whole the extractor uses ballinst displacing scartner leeth, "Oct. 48 Maddox & Associates:

Maddox & Associates:

Matthewaying on Northeast Corridor, "Apr. 38 Matthewaying on Northeast Corridor, "Apr. 38 Matthewaying on House and Matthewaying on House and Matthewaying on House and House and House and House and London," I have a long to the London House and House a

Stop & Co maintenance: should it be researched, (E) Apr. 8
Industrial engineering in, \*Apr. 30
Rising worker disenchantment, (E) May 9
Will the future be M/W dominions, (E) Jun. 13
Spot work practices, organization and equipment, \*Jun. 38

"Jun. 38
Pride vs. progress, (E) Jun. 82
M/W world is ongoing and unchanging, (E) Aug. 62
The Long Island Railroad: small in size, big in M/W
thinking, "Sept. 20
Matching M/W practice to required use of track-Part
I: Curing problems, "Sept. 34
New task force puts together M/W research, (E) Sept.
74

New lask force puts together MW researc 74
To feture for M/W machinery, \*Oct. 72
Matching MW practice to required use o
II: ties and ballast, \*Oct. 51
MW field of battle, (E). Nov. 58
The way it was-75 years of M/W, \*Dec. 37
The next 75 years, \*Dec. 50 use of track-Part

Then and now—The human side of M/W, \*Dec. 52
Progress, but no peace, (E) Dec. 86
Marmon Transmotive:
Switch undercutter with built-in turntable, \*Oct. 139
Meadowbrook Enterprises, Inc.:
Modem grade crossing trends on EJ&E, \*Dec. 63
Metal Fatigue:
B&B departments make regular inspection for, (A)
Sept. 58
In failure of Chicago transit structure, \*Mar. 44
Milwaukee Road:
Gears 4-R spending to reorganization, \*Jan. 33
Missourl Pacific:
Engineering fabric defers spot maintenance on, \*Jun. 28

Engineering 28
Modern Track Machinery, Inc.:
Exhibits power track wrench with torque dial, \*Oct.

Modern Track Machinery, Inc.:
Exhibits power track wrench with torque dial, \*Oct. 48
Naitonal Railroad Contractor's Association:
Vegetation control seminar simplifies applicator licensing, \*Feb. 18
Northeast Corridor Improvement Program:
Inertial surveying along, \*Apr. 38
Norfolk & Western:
Shapes track practices for heavy tonnage, much curvature, \*Mar. 38
Demonstrates track machines for AREA committee, \*Jul. 37
Omark Industries:
Introduces Trak-Lok fastening system, \*Oct. 48
Equipment displays at REMSA '79, \*Nov. 30
Oneida General Corp.:
Tests non-slip headblock cover, \*Oct. 43
Ontario Northland Railway:
Small railroad with progressive MW training, \*Aug. 34

Small railroad with progressive M/W training, "Aug. 4P androl, Inc.:
One million clips on LIRR, \*(S) Jun. 50
Park Rubber Co.:
Largest rubber grade crossing, \*(S) May 56
Plasser American Corp.:
Track machines demonstrated for AREA committee,
"Jul. 37
Machine mills rail heads, removes overflow, \*(S) Oct.

Truckmounted track geometry car, \*Nov. 41

Portec/RMC: New tie-New tie-cutting principle, \*Oct. 42 Equipment display at REMSA '79, \*Nov. 30

Prorail:
Equipment display at REMSA '79, \*Nov. 30
Racine Railroad Products:
Equipment display at REMSA '79, \*Nov. 30
Reil:

Equipment display at REMSA 79, \*Nov. 30 Rail: Reclamation provides profit, training, \*May 45 Methods of creep stabilization, (A) Jun. 68 Grinding conditions curves in Canadian Rockies, \*(S) Jul. 70 Electronic device measures, analyzes corrugations, device measures, analyzes corrugations,

Electronic device measures, analyzes considered to the constraint of the constraint

Railroad Industry:
Update on 4-R funding, \*Jan. 32
Mergers: Who's next, (E) Apr. 62
Federal ownership of right of way, (E)
Growth amid non-growth, (E) Jul. 102
Are increasing tie and rail programs
(A) Oct. 126 (E) May 82

iroad track contractors: Look at past, present, future, \*Jul. 22 1979 directory, Jul. 41 lway Engineering-Maintenance Suppliers Associa-

Railway Engineering-Maintenance Suppliers Associa-tion:
Track equipment displayed at Shreveport, \*Mar. 33
Guide to 1979 Atlanta exhibit, \*Oct. 26
1979 Atlanta conference program, \*Oct. 39
Significance of Atlanta, (E) Oct. 142
Parade of products, equipment displayed at Atlanta,
\*Nov. 30
Railway Progress Institute:
RPI tours FAST, \*Sept. 50
Railway Trackwork Co.:
Exhibits new self-propelled dual ballast cribber,
\*Oct. 48
Resunord:

Railroad track contractors

Remord:

Remord:
Equipment display at REMSA '79, Nov. 30
Roadmasters' and Bridge & Building Associations:
Atlanta report on annual conferences, "Nov. 26
Rock fall:
What signs indicate imminence of in cuts, (A) May 76
Rock Island:
Rock: big plans, high hopes but no money yet, "Jan. 325

35
Safetran Systems Corp.:
Equipment display at REMSA '79, \*Nov. 30

ty:
Death needs only an instant, (E) Mar. 8
Safety with productivity on bridge deck renewal,
"Jul. 40

- Jul. 40
Important points in movement of large track equipment, (A) Sept. 60
Important lessons in avoiding track work accidents,
(A) Nov. 52

Santa Fe:
Shoulder cleaner eases tie replacement, \*(S) Apr. 50
Orders new rail pick-up units, \*(S) Sept. 53

Schramm:
Equipment display at REMSA '79, \*Nov. 30
Semperit-Bodan:
Modular crossing forms bridge deck over track, \*Oct. Simplex Inc.:

Simplex Inc.:
Introduces new line of hydraulic jacks, \*Oct. 42
Southern Railway:
Filter fabric solves yard soil problems, \*Jun. 34
Steelplank Corp.:
Grit-embedded epoxy coating for skid resistant
crossings, (S) Sept. 53
Switches:
Low power electric switch heater avoids runoff, \*(S)
Apr. 50
Identification and correction of looseness in, (A) Jul. 87

Tie-Gard: Decay-controlling preservative for ties, \*Oct. 42 Do treated wood ties have longer life, (A) Jan., 48 Planning cost effective renewal, \*Apr. 4 Shoulder cleaner eases replacement, \*(S) Apr. 50 Matching tie life to replacement cycle, \*Jul. 66 Advantages of removal by cutting, (A) Jul. 90 Matching M/W practice to required use of track-Part II: Ties and ballast, \*Oct. 81 Service life of treated hardwood ties, (A) Nov. 51

Service life of treated hardwood ties, (A) Nov. 51

NW shapes track practices for heavy tonnage, much
curvature, "Mar. 38

Installing bonded joints, (A) Mar. 64

Installing bonded joints, (A) Mar. 64

Inertial surveying along the Northeast Corridor,

The track patrolman: then and now, "May 48

On/off track excavator, "(S) May 56

Australian research tackles heavy haul track damage,
"May 62

Applications of laser beams in alignment, (A) May 68

Restoration of standard sections, (A) May 69

Qualifications needed to inspect to FRA standards,

(A) May 75

What expertise required to remedy unstable track,

(A) May 78

Available devices for keeping crossings tight, (A) Jun.

66

Features of pads, ballast, joints, transitions in concrete tie track, \*Aug. 30

crete tie track, "Aug. 30

How important are computers on track geometry cars,
(A) Aug. 48

Tell-tale signs indicating gage-widening on curves,
(A) Aug. 55

Frog with movable wing rails, "(S) Sept. 53

Track-mounted geometry car, "Nov. 41

Greatest contributions of geometry cars, (A) Dec. 72

Fundamentals of design, construction at grade crossings, (A) Dec. 78

ck Gangs:

crossings, (A) Dec. 10

Track Gangs:
Production rate versus quality control, (A) Mar. 68
Section gangs still in use on LIRR, \*Sept. 20
Is absenteeism on the rise, (A) Oct. 115

ning: Systemized planning of OJT, \*Apr. 47 Organization of new employee OJT, (A) Jun. 73 Small railroad with progressive M/W training, \*Aug.

34

34
True Temper Corp.:
Equipment display at REMSA '79, "Nov. 30
Union Pacific:
Orders new rail pick-up units, (S) Sept. 53
U.S. Thermit, Inc.:
Lightweight universal rail grinder, "Oct. 43
J and A rail clamp for bolites joining of blank ends in CWR operations, "Oct. 46
Type MT bonded insulated rail joint, Oct. 46
Rail shear for field welding, "Oct. 48
WABCO: WABCO:

Thermal powered gates, flashers for remote cross-ings, \*(S) May 56 ings, \*(S) May 56
Warner & Swasey Co.:
Flatcar mounted Gradall used in Amtrak ditching,
\*Feb. 30

Weed & brush control: Herbicide application: unsticking a legal cobweb, (E) Feb. 8

Feb. 8
Vegetation control seminar attracts railroad attendance, Feb. 18
Right-of-way sprayers for herbicide application,
Feb. 22

Vegetation control reclaims historic track, \*(S) Jun. 50

### **New Products** (\*) Illustrated item

Abex Corp.:
Muffler-equipped spike driver, \*Sept. 56
Hydraulic switch machine and stand, \*Sept. 56
Arthur Railroad Spikelock Corp.:
Insertion tool for Spikelock, \*Sept. 54
Badger Construction Equipment Co.:
Model 460 Telescopic boom escavator, \*Apr. 52
Self-propelled rough terrain cranes, \*Jul. 73
Ballomore.

Self-propelled rough terms.

Ballymore:
Portable floor cranes, May 80

B.I.E. Instruments, Inc.:
Telescopic inspection mirror, \*Oct. 112
Celanese Fibers Marketing:
Engineering fabric for railroad stabilization, Jun. 51
ChemGrout, Inc:
Model CG-500 portable grout plant, \*Sept. 56
Chisones:

Chicopee:
Low linting industrial wipers, \*Dec. 70 Low linung intension.

Colberg, Inc.:
Lightweight rail grinder, °May 65
Erico Products, Inc.:
Mechanical punch and plug bonds, °Oct. 112

Erocon:
Air vegetation seeder, \*Dec. 70
Galion Mfg. Div. (Dresser Industries, Inc.):
Articulated graders, \*Oct. 110

Articulated graders, "Oct. 110
Garon Products:
Emergency pothole patch, "May 65
Telfilte non-skid flooring, "Oct. 112
General Electric Co.:
Abrasion resistant windshield material, "Dec. 70
Holland Co.:
Model D-1800 rail distribution and pick-up system,
"Oct. 110
Industrial Acoustics Co.:
Highway/railroad noise barrier, "May 66
Jackson Vibrators, Inc.:
Model 2400 compact tamper, "Jan. 42
Jacobsen Div. of Textron, Inc.:
UV-4 four wheel drive utility vehicle, "Jun. 51
L&A Products:

UV-4 four wness turns and washer, \*May 80 Laser Alignment, Inc.:
Laser rail alignment system, \*Dec. 68 Lescon Industries:
Flexible pipe couplings, \*Dec. 70

Maag Agrochemical Marketing:
Systematic plant growth regulator, Oct. 112
Manon Transnotive.

New tie unloader, "Mar. 59
Loading/unloading ramp, "Mar. 59
Martin Beilhack Transportation Development Co.:
Self-propelled locomotive and snowblower, "Aug. 46
Midwest Industrial Supply, Inc.:
Switch de-icing chemical, Oct. 112
Mitchell Equipment Corp.:
Universal rail threader, "Mar. 62
MTG Geotechnical:
Pile load-bearing slide chart, May 66
Modern Track Machinery, Inc.:
Model TR-10 universal trolley, "Mar. 59
Tie loader, "Apr. 52
Nitsoc Noc.:
Ball-point metal marker, "Sept. 56
Nitto Kohki, U.S.A.:
Myton M-225 pneumatic grinder, "Jul. 77
NonFluid Oil Corp.:
Air tool lubricant, "May 66
Oil Recovery Systems:
Liquid sampling device, "May 64
Oneida General Corp.:
Steel-reinforced polyethylene crossing, "May 64
Rubber-timber composite crossing, May 66
Polyethylene foam drip pans, "May 66
Osmose Railroad Division:
The protecting chemical cartridge, "Jun. 54
Pater.
The adapter fittings chart, "Dec. 70
Petrokem Corp.:
Biodegradable ice and snow melter, "Sept. 54
Portec, Inc.:
Gangnail plate for ties, "Feb. 36
RMC rail vibrator car, "Mar, 58
RC rail vibrator car, "Mar, 58
RC rail vibrator car, "Mar, 58
Clip drive for concrete ties, "Mar, 62
Mobile spike cleaner, "Mar, 58
Clip drive for concrete ties, "Mar, 62
Tie cutter, "Dec. 68
Power Tools, Inc.:
Portable jigsaw, "Jul. 77
Proform, Inc.
Plastic track collector system, "Feb. 36
Prorail:
Double elastic rail fastening, "Aug. 46
Racine Construction Tool:

rail: Double elastic rail fastening, \*Aug. 46

Double elastic rail fastening, \*Aug. 46 Racine Construction Tool: Hydraulic roto-hammer/drill, \*May 65 Racine Federated, Inc.: Portable pole puller, \*Sept. 56 The Rails Co.: Model 55-R compact compressor, \*Feb. 36 Switch heater control panels, \*Mar. 59 Automatic snow detectors, \*Mar. 62 All electric switch heater, \*Jul. 73

Sweeper hose and bristles, \*Oct. 110

Railway Track-Work Co.:

Model E-50 regaging adzer, \*Feb. 36
Frog, switchpoint and surface grinder, \*Sept. 54
Dual ballast cribber, \*Sept. 54
Skeletonizer sleds roadbed, removes ties, \*Dec. 68
Randustrial Corp.:

Wet surface roof repair kit, \*May 80
Fast anchoring bolt setting compound, \*Jul. 73
Weed control agent, Jul. 77
Cold-applied crack and joint filler, \*Sept. 56
Rexnord, Inc.:

Nordberg rail lifter, \*Jun. 54
RPC Corp.:

Mobile straddle loaders, \*Dec. 68
Schramm Inc.:

Mobile straddle loaders, \*Dec. 68 Schramm Inc.: Self-propelled compressor/tractor, \*Jun. 54 Security Locknut: Patented fail-safe locknut, \*Apr. 52 Silikal North America, Inc.: Polymer system for concrete repair, \*Aug. 46 Singer Safety Products: Quilted fiberglass sound control material, \*Jul. 76 Cullmat. Inc.:

Quilted fiberglass sound control material, "Jul. 76 ltest, Inc.: Ro-Tap sieve shaker, "Mar. 58 cetrum infrared, Inc.: Electric hot air switch beater, "May 66 Electric infrared heaters, "Oct. 112 Reflectors allow choice of heat patterns, "Dec. 68

Electric infrared heaters, \*Oct. 112
Reflectors allow choice of heat patterns, \*Dec. 68
Stanley Hydraulic Tools:
Hydraulic-powered sinker drill, \*Jul. 73
Steelplank Corp.:
Modular steel crossing. \*May 65
Templeton Kenly & Co.:
Hydraulic 50/100-ton jacks, \*Dec. 70
Tropical Industrial Coatings:
Rubberized, fiber roofing compound, \*Apr. 54
True Temper Corp.:
Anti-overturning device, \*Jan. 42
Oil containment system, \*Jan. 42
High density PE crossing system, \*May 64
Variable cross-section engineering fabric, Jun. 51
U.S. Thermit:
Hydraulic rail shear, \*Mar. 58
Insulated rail joint kit, \*Apr. 52
Wacker Corp.:
Rammer ariller system, \*Jun. 51
War Sterne Carled tires, \*Apr. 54
Wide-frame carrier for Gradall excavator, \*Jul. 73
Weil Service Products Corp.:
Protective tank bottom shield, \*Oct. 110
Woodings-Verona Tool Works:
Container carrier, \*Feb. 36
W. R. Grace & Co.:
Reinforced concrete anti-corrodent, Oct. 112

### (\*) Illustrated articles

Abbott, Russell A., \*Jul. 66, \*Apr. 44 Ahlf, Robert E., \*Oct. 81, \*Sept. 34 Amos, Charles L., \*May 28 Anderson, B. G., (A) May 78

Anderson, B. C., (A) May 19

bartley, C. W., (A) Oct. 192, (A) Mar. 92

von Beckman, Helmuth, \*Oct. 102

von Beckman, Helmuth, \*Oct. 102

berg, R. W., (A) Feb. 56

Berg, R. W., (A) Feb. 56

Blanchard, Leo, \*May 48

Brakenisk, W. E., (A) Oct. 118

Brent, J. W., (A) Aug. 48

Brohaugh, R. G., (A) Feb. 52

Bryant, N. D., (A) Jun. 56, (A) Jan. 57

Burns, David R, \*Oct. 72, \*Jan. 28

Byers, W. G., (A) Jun. 66

Syers, W. C., (A) Jul. 69

Cantrell, D. D., (A) Oct. 117

Carlson, M. N., (A) Jul. 87

Carter, James N. Jr., (L) May 19

Carter, S. B., (A) Mar. 64

Christianer, M. C., (A) Jan. 60, (A) Oct. 121

Collister, Lauress C., (L) Aug. 59, (A) Jan. 48

Cosgrove, P. A., (A) Jun. 74

Comwell, R. P., (A) May 75

Coy, C. L., (A) Jan. 64

Crathon, D. G., (A) May 69

Cummins, C. H., (A) Oct. 118

Davidson, J. W., (A) Apr. 59
Davis, Doug, (A) Jun. 67
Davis, D. R., (A) Oct. 130
Davis, R. E., (A) Mar. 88
Devalle, J. W., (A) Jan. 45
Dolan, Peter J., (A) Sept. 69
Driscoll, D. J., (A) Jan. 58
Durham, L. A. Jr., \*Mar. 38

Ellis, J. S., (A) Jul. 78

Farrar, K. B., (L.) Aug. 59 Farris, J. B., (A) Feb. 44 Fish, Arthur, \*Sept. 48 Fite, G. C., (A) Jul. 90 Fontham, R. C., (A) Mar. 66 Fortney, E. O., (A) May 69 Fox, John, (A) Oct. 127 Franzen, E. T., (A) Apr. 58

Gallup, David A., \*Apr. 47 Greene, Roger S., (A) Jun. 66

Hahn, H. D., (A) Jan. 46 Hale, C. W., (A) Apr. 55 Henderson, K. E., (A) Feb. 38, (A) Sept. 64 Hinson, A. E., (A) Aug. 52 Hoadley, D. E., (A) May 70, (A) Jun. 66, (A) Jul. 82, 90 Holliman, James A., (A) Aug. 57 Huot, Leland, (A) Jan. 60 Hutcheson, T. B., (A) Feb. 56 Hyma, W. R., (A) Apr. 55

Izzo, S., (A) May 75, (A) Feb. 40

Johnson, E. Q., (A) Jul. 94 Jones, Charles, S., (A) Jun. 74 Jordan, S. L., (A) Oct. 117

Magdox, S. Ruffin Jr., "Apr. 38
Malbotra, B. K., (A) Mar. 57, (A) May 73, (A) May 75, (A) May 76, (A) Mar. 40, (A) Mar. 57, (A) May 78, (A

Moore, Allen D., \*May 35

Neben, Jerry, (L) Mar. 16 Newby, J. E., (A) May 79 Nordstrom, R. D., (A) Sept. 58, (A) Jun. 59

Peak, Rowland H. Jr., (L) Jul. 12 Peckover, F. L., (A) Feb. 48, (A) Jan. 63 Plotkin, Don, (A) May 68 Polterauer, Gerhard, (A) Jan. 62 Presthus, E. J., (A) Jun. 56 Price, T. A., (A) Aug. 56

Reynolds, J. B., (A) Jun. 59 Russell, J. K., (A) Sept. 63, (L) Jan. 66

Satterfield, Don. (A) May 74
Schaaf, H. L., \*Jun. 25
Sluz, Andrew (A) Feb. 44, \*Jan. 26
Smith, B. L. (A) Oct. 124
Smith, J. B. Jr. (A) Mar. 66
Stroud J. H. (A) Oct. 115
Sutherland, K. W. (A) Mar. 84
Sweet, S. W., (A) Jun. 73

Terrill, V. R. (A) Feb. 53 Thayer, G. S., (A) Feb. 58 Timony, Glennie, (L) Jan. 6 Trottochau, L. D., \*Oct. 93

Youhanaie, Al, (A) May 70 Young, W. B., (A) Feb. 56, (A) Feb. 40

